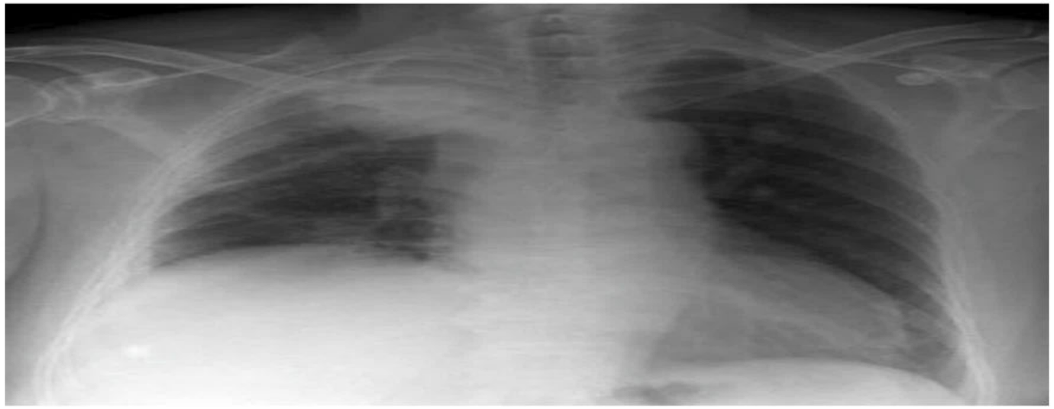
Question 1 of 231

Question Difficulty: Hard

Mr. X is complaining of dyspnea that worsens in exertion and in the supine position.

Examination shows he is tachypneic. There is dullness and absent breath sounds on percussion and auscultating the right lower chest. CXR is shown in the image.



Which of the following investigation would be useful in diagnosis?

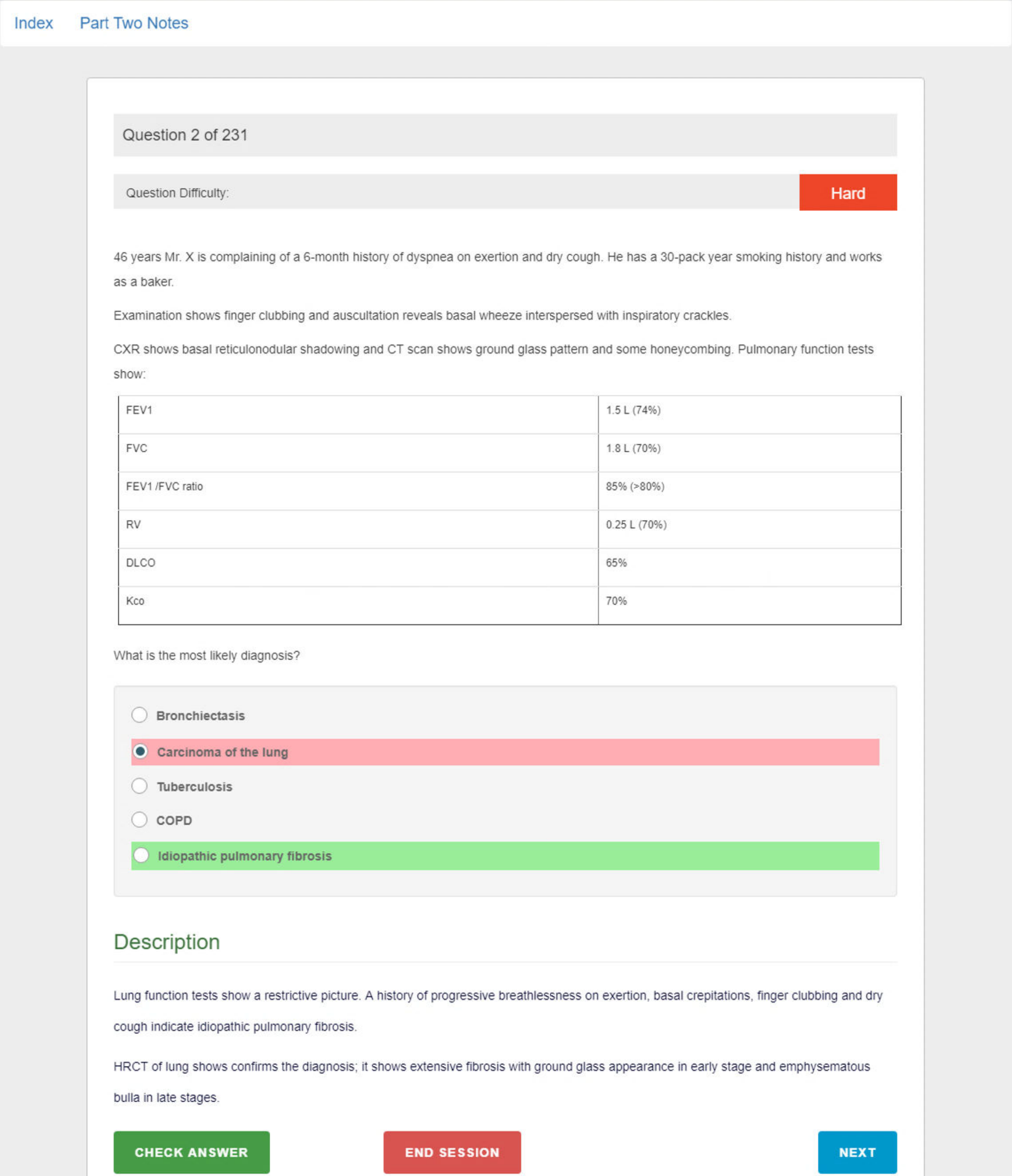
- ○ **Echocardiography**
- ○ **CT Thorax**
- ○ **Electrocardiogram**
- ○ **Fluoroscopy**
- ● **Magnetic resonance imaging scan**

Description

This patient has unilateral left diaphragmatic paralysis. It may be accidentally discovered or manifested by dyspnea that worsens in the supine position.

CXR (diagnostic for unilateral paralysis) shows elevated right hemidiaphragm. Fluoroscopic sniff testing shows paradoxical elevation of the paralyzed diaphragm with inspiration (diagnostic but not specific). Ultrasonography is diagnostic for unilateral and bilateral palsies.

CHECK ANSWER END SESSION NEXT



Question 2 of 231

Question Difficulty: Hard

46 years Mr. X is complaining of a 6-month history of dyspnea on exertion and dry cough. He has a 30-pack year smoking history and works as a baker.

Examination shows finger clubbing and auscultation reveals basal wheeze interspersed with inspiratory crackles.

CXR shows basal reticulonodular shadowing and CT scan shows ground glass pattern and some honeycombing. Pulmonary function tests show:

FEV1	1.5 L (74%)
FVC	1.8 L (70%)
FEV1 /FVC ratio	85% (>80%)
RV	0.25 L (70%)
DLCO	65%
Kco	70%

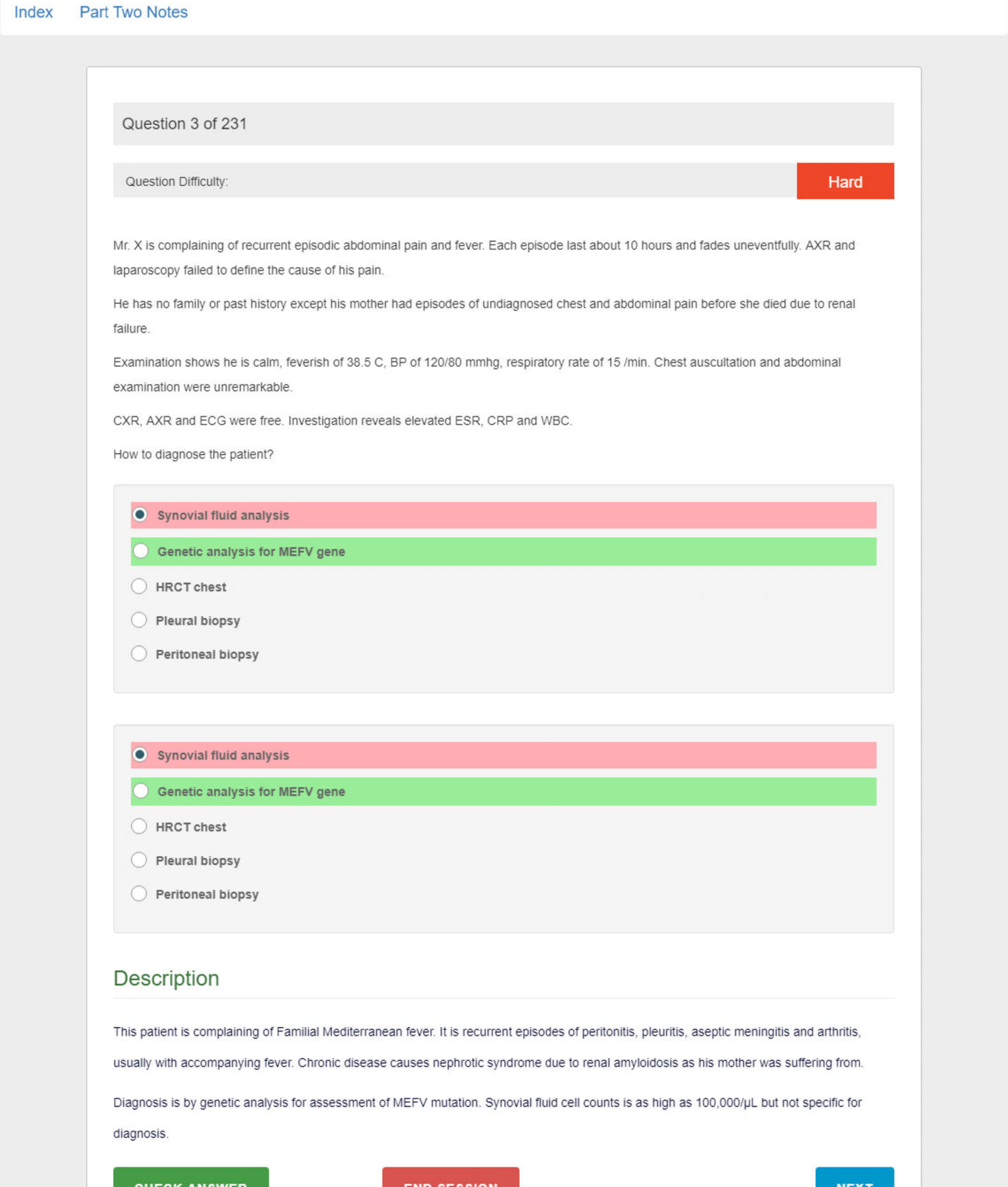
What is the most likely diagnosis?

- ○ **Bronchiectasis**
- ● **Carcinoma of the lung**
- ○ **Tuberculosis**
- ○ **COPD**
- ○ **Idiopathic pulmonary fibrosis**

Description

Lung function tests show a restrictive picture. A history of progressive breathlessness on exertion, basal crepitations, finger clubbing and dry cough indicate idiopathic pulmonary fibrosis.

HRCT of lung shows confirms the diagnosis; it shows extensive fibrosis with ground glass appearance in early stage and emphysematous bulla in late stages.



Question 3 of 231

Question Difficulty: **Hard**

Mr. X is complaining of recurrent episodic abdominal pain and fever. Each episode last about 10 hours and fades uneventfully. AXR and laparoscopy failed to define the cause of his pain.

He has no family or past history except his mother had episodes of undiagnosed chest and abdominal pain before she died due to renal failure.

Examination shows he is calm, feverish of 38.5 C, BP of 120/80 mmhg, respiratory rate of 15 /min. Chest auscultation and abdominal examination were unremarkable.

CXR, AXR and ECG were free. Investigation reveals elevated ESR, CRP and WBC.

How to diagnose the patient?

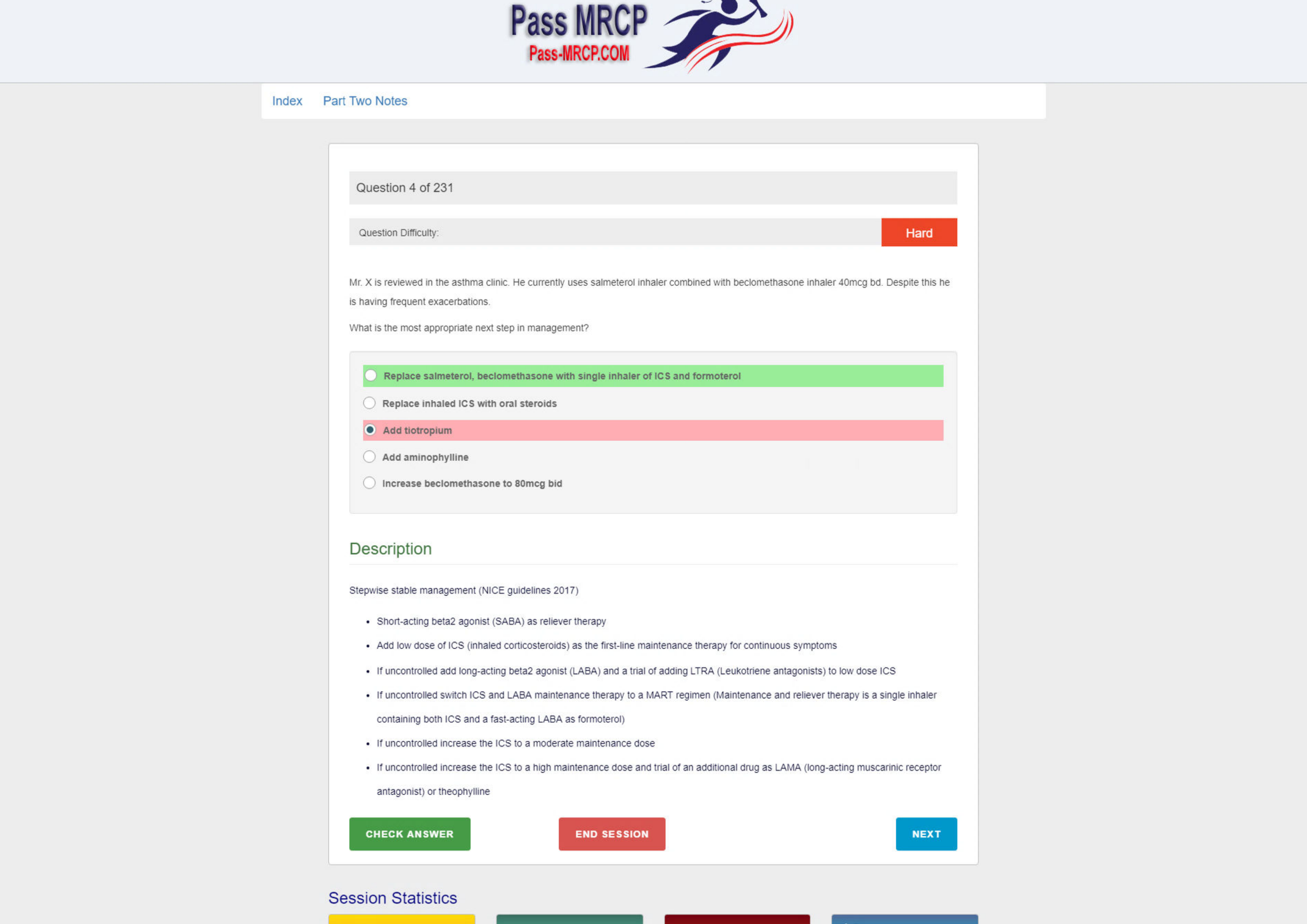
- ● **Synovial fluid analysis**
- ○ **Genetic analysis for MEFV gene**
- ○ **HRCT chest**
- ○ **Pleural biopsy**
- ○ **Peritoneal biopsy**

- ● **Synovial fluid analysis**
- ○ **Genetic analysis for MEFV gene**
- ○ **HRCT chest**
- ○ **Pleural biopsy**
- ○ **Peritoneal biopsy**

Description

This patient is complaining of Familial Mediterranean fever. It is recurrent episodes of peritonitis, pleuritis, aseptic meningitis and arthritis, usually with accompanying fever. Chronic disease causes nephrotic syndrome due to renal amyloidosis as his mother was suffering from.

Diagnosis is by genetic analysis for assessment of MEFV mutation. Synovial fluid cell counts is as high as 100,000/μL but not specific for diagnosis.



Question 4 of 231

Question Difficulty: Hard

Mr. X is reviewed in the asthma clinic. He currently uses salmeterol inhaler combined with beclomethasone inhaler 40mcg bd. Despite this he is having frequent exacerbations.

What is the most appropriate next step in management?

○ **Replace salmeterol, beclomethasone with single inhaler of ICS and formoterol**
○ **Replace inhaled ICS with oral steroids**
● **Add tiotropium**
○ **Add aminophylline**
○ **Increase beclomethasone to 80mcg bid**

Description

Stepwise stable management (NICE guidelines 2017)

- Short-acting beta2 agonist (SABA) as reliever therapy
- Add low dose of ICS (inhaled corticosteroids) as the first-line maintenance therapy for continuous symptoms
- If uncontrolled add long-acting beta2 agonist (LABA) and a trial of adding LTRA (Leukotriene antagonists) to low dose ICS
- If uncontrolled switch ICS and LABA maintenance therapy to a MART regimen (Maintenance and reliever therapy is a single inhaler containing both ICS and a fast-acting LABA as formoterol)
- If uncontrolled increase the ICS to a moderate maintenance dose
- If uncontrolled increase the ICS to a high maintenance dose and trial of an additional drug as LAMA (long-acting muscarinic receptor antagonist) or theophylline

Session Statistics

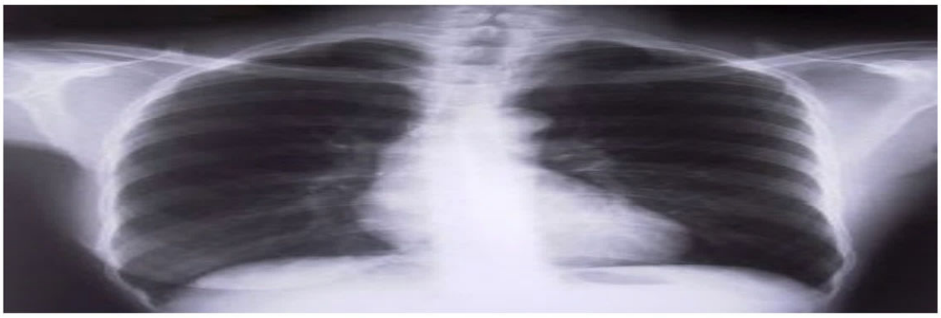
Question 5 of 231

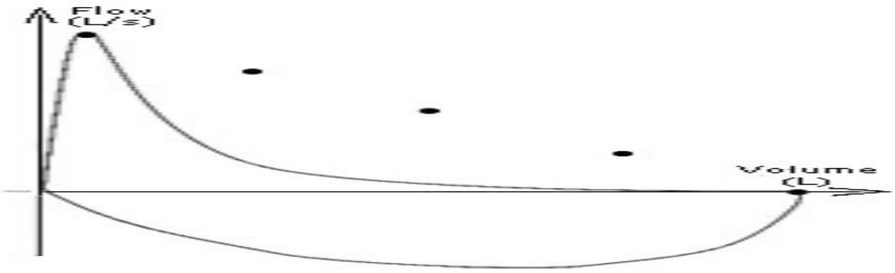
Question Difficulty: Hard

12 years old boy is complaining of paroxysmal attacks of cough, dyspnea, and chest tightness that frequently occur in spring season and in the winter season exacerbated by common cold. He had a family history of urticaria or allergic rhinitis.

Examination shows scattered wheezes all over the chest. Other examinations are normal. Flow volume loop and CXR are shown in the image. Pulmonary function tests show:

FEV1	1.6 L (50%)
FVC	2.8 L (75%)
FEV1 /FVC ratio	60 % (>70-85%)
TLC	4.5 L (120%)
KCO	1.36 (120%)





What is the most likely diagnosis?

○ Cystic fibrosis
○ Emphysema
● Bronchial asthma
○ Bronchiolitis obliterans
○ Bronchiectasis

Description

Pulmonary function tests show obstructive lung disease. It is manifested by reduced FEV1, FVC, FEV1/FVC ratio and increased residual volume RV. Flow volume loop shows scooped expiratory curve. CXE shows hyperinflated lungs with clear interstitium.

The differential diagnosis is BA or emphysema. Transfer factor can be normal or elevated in patients with asthma but are always reduced in emphysema.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 4 ✓ Correct: 0 ✕ Incorrect: 4 Average Score: 0 %

Question 6 of 231

Question Difficulty: **Hard**

30 years Mr. X is complaining of increasing shortness of breath. Past history of note includes previously having smoked 20 cigarettes per day over 5 year period, although he has not smoked now for 4 years. Family history shows his father died from liver cirrhosis on his 40 years.

Examination shows coarse wheeze and occasional crackles throughout both lung fields. Abdominal examination shows enlarged liver.

CXR shows hyperinflated lungs. Liver functions tests show:

ALT	66 U/L	(8-20 U/L)
AST	84 U/L	(8-20 U/L)
Serum amylase	55 U/L	(25-125 U/L)
Serum creatine kinase	96 U/L	(25-90 U/L)

Pulmonary function tests show:

FEV1	2 L (70%)
FVC	3.2 L (90%)
FEV1 /FVC ratio	68% (>80%)

What is the most likely diagnosis?

Serum creatine kinase	96 U/L	(25-90 U/L)

Pulmonary function tests show:

FEV1	2 L (70%)
FVC	3.2 L (90%)
FEV1 /FVC ratio	68% (>80%)

What is the most likely diagnosis?

- ○ **Cor pulmonale**
- ● **Alpha-1 antitrypsin deficiency**
- ○ **Hepatitis B**
- ○ **Cystic fibrosis**
- ○ **Hepato-pulmonary syndrome**

Description

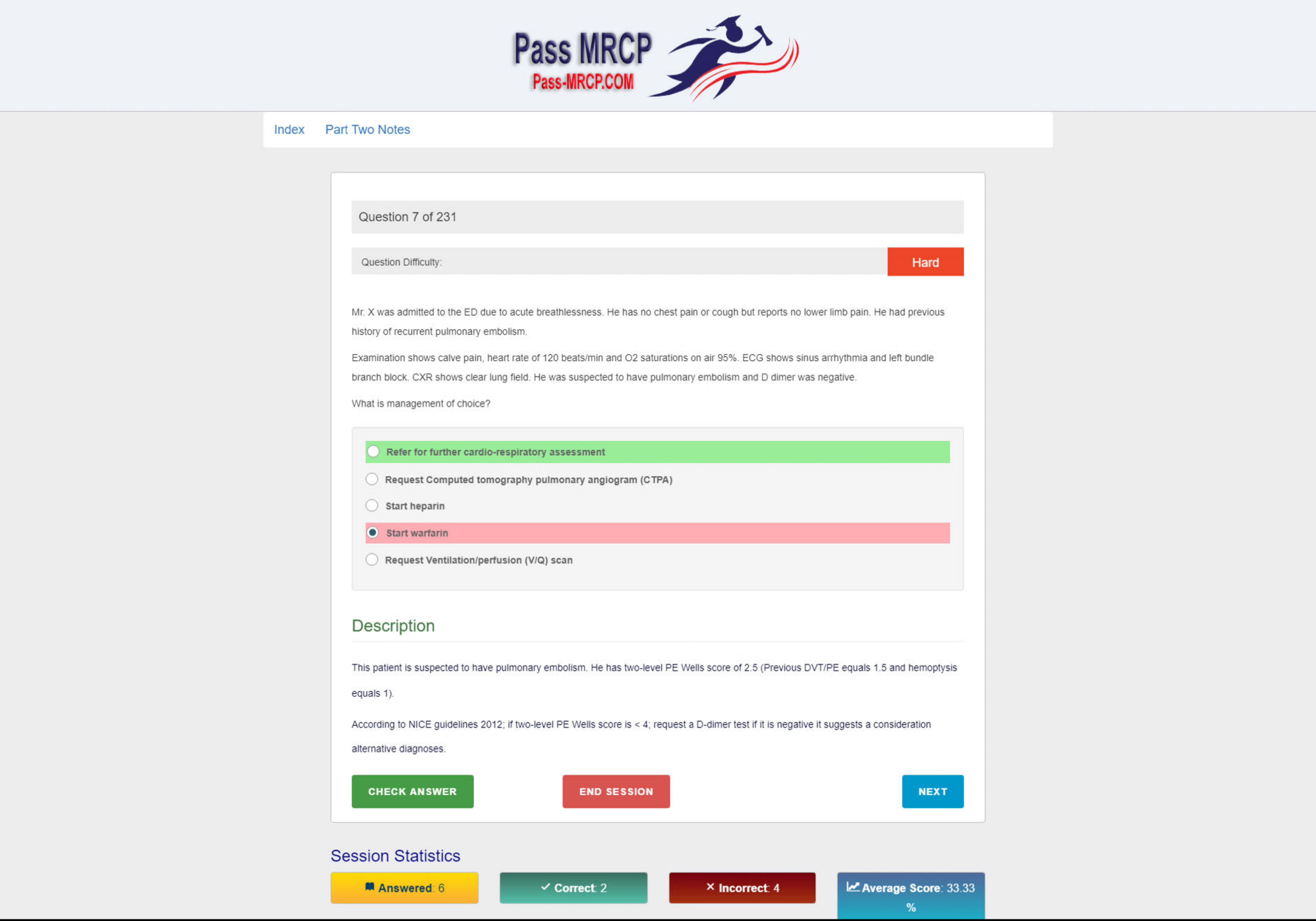
This patient has Alpha-1 antitrypsin deficiency. It is an inherited condition caused by lack of protease inhibitor normally produced by the liver protects the lungs connective tissue from neutrophil elastase. It is inherited in an autosomal recessive / co-dominant fashion.

It is manifested by panacinar emphysema and liver cirrhosis.

CHECK ANSWER **END SESSION** **NEXT**

Session Statistics

Answered: 5 ✓ **Correct**: 1 ✕ **Incorrect**: 4 **Average Score**: 20 %



Question 7 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to acute breathlessness. He has no chest pain or cough but reports no lower limb pain. He had previous history of recurrent pulmonary embolism.

Examination shows calve pain, heart rate of 120 beats/min and O2 saturations on air 95%. ECG shows sinus arrhythmia and left bundle branch block. CXR shows clear lung field. He was suspected to have pulmonary embolism and D dimer was negative.

What is management of choice?

- ○ **Refer for further cardio-respiratory assessment**
- ○ **Request Computed tomography pulmonary angiogram (CTPA)**
- ○ **Start heparin**
- ● **Start warfarin**
- ○ **Request Ventilation/perfusion (V/Q) scan**

Description

This patient is suspected to have pulmonary embolism. He has two-level PE Wells score of 2.5 (Previous DVT/PE equals 1.5 and hemoptysis equals 1).

According to NICE guidelines 2012; if two-level PE Wells score is < 4; request a D-dimer test if it is negative it suggests a consideration alternative diagnoses.

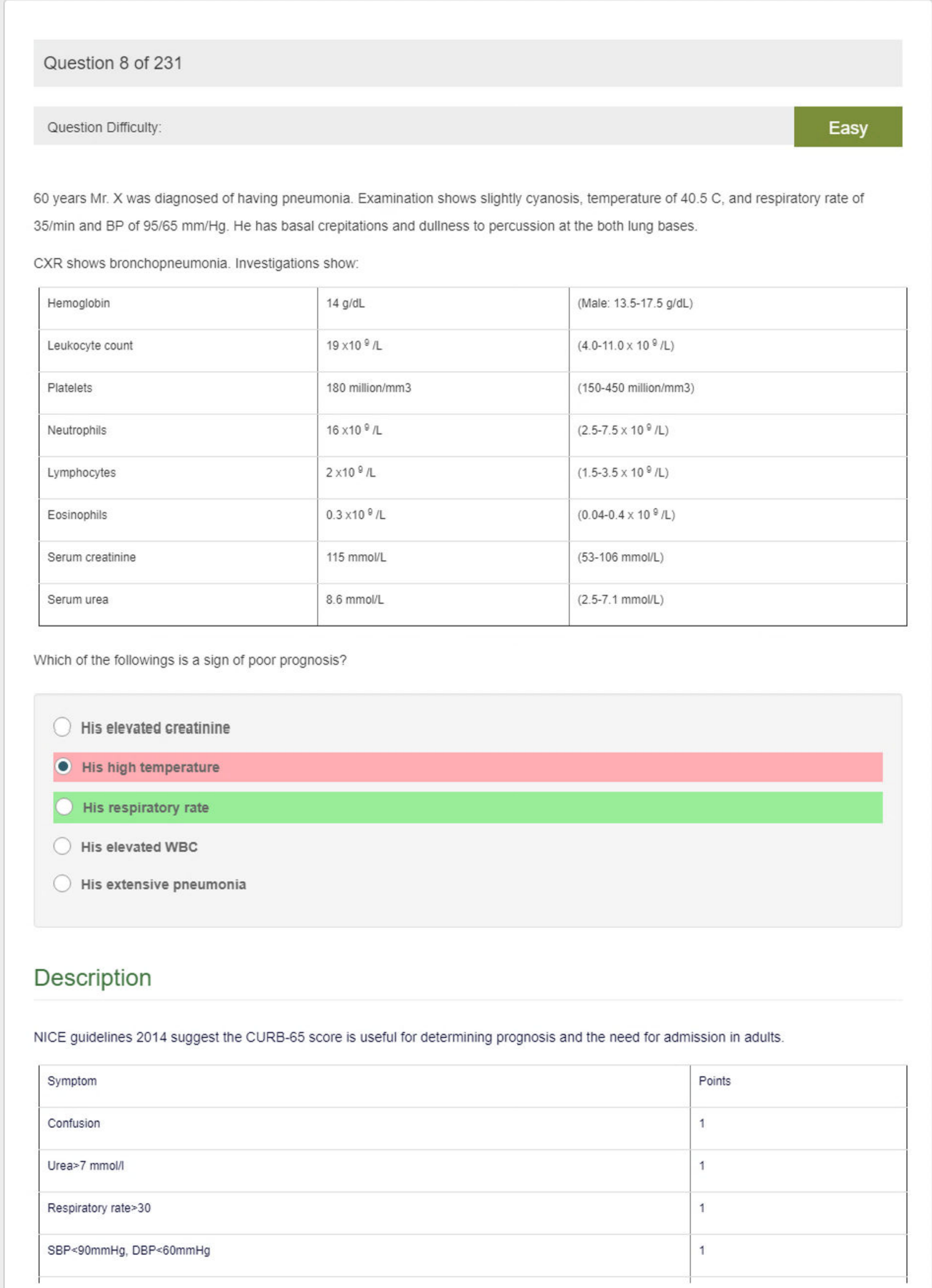
Session Statistics

Answered: 6

✓ **Correct**: 2

✕ **Incorrect**: 4

Average Score: 33.33 %



Question 8 of 231

Question Difficulty: **Easy**

60 years Mr. X was diagnosed of having pneumonia. Examination shows slightly cyanosis, temperature of 40.5 C, and respiratory rate of 35/min and BP of 95/65 mm/Hg. He has basal crepitations and dullness to percussion at the both lung bases.

CXR shows bronchopneumonia. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	2 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.3 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	8.6 mmol/L	(2.5-7.1 mmol/L)

Which of the followings is a sign of poor prognosis?

○ **His elevated creatinine**

● **His high temperature**

○ **His respiratory rate**

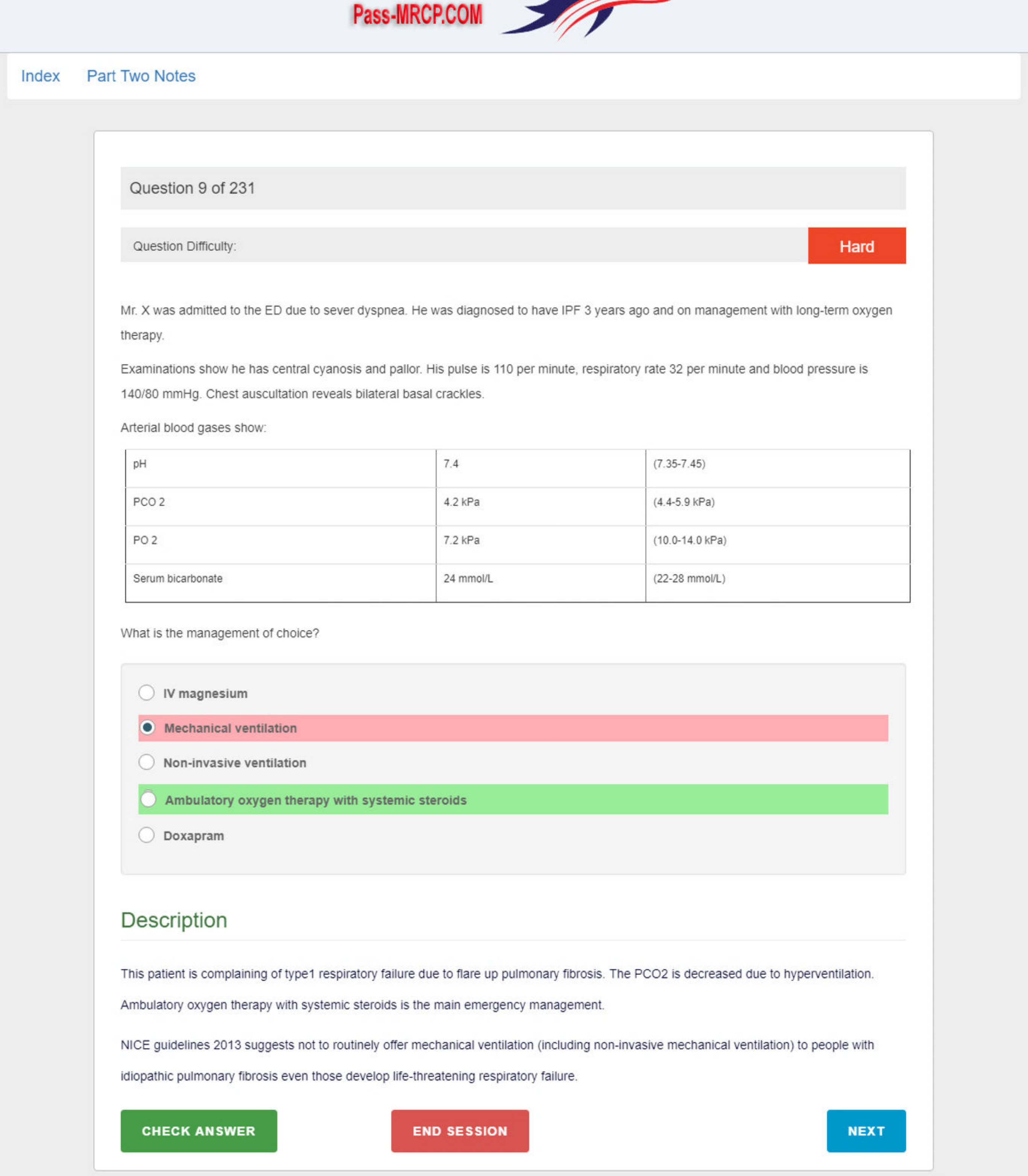
○ **His elevated WBC**

○ **His extensive pneumonia**

Description

NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1



Question 9 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to sever dyspnea. He was diagnosed to have IPF 3 years ago and on management with long-term oxygen therapy.

Examinations show he has central cyanosis and pallor. His pulse is 110 per minute, respiratory rate 32 per minute and blood pressure is 140/80 mmHg. Chest auscultation reveals bilateral basal crackles.

Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	4.2 kPa	(4.4-5.9 kPa)
PO 2	7.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

What is the management of choice?

- ○ **IV magnesium**
- ● **Mechanical ventilation**
- ○ **Non-invasive ventilation**
- ○ **Ambulatory oxygen therapy with systemic steroids**
- ○ **Doxapram**

Description

This patient is complaining of type1 respiratory failure due to flare up pulmonary fibrosis. The PCO2 is decreased due to hyperventilation.

Ambulatory oxygen therapy with systemic steroids is the main emergency management.

NICE guidelines 2013 suggests not to routinely offer mechanical ventilation (including non-invasive mechanical ventilation) to people with idiopathic pulmonary fibrosis even those develop life-threatening respiratory failure.

Question 10 of 231

Question Difficulty: Hard

80 years Mr. X was complaining of productive cough, fever accompanied by shaking chills and dyspnea for 3 days. Examination shows he is alert with temp of 40 C, RR 25/min and BP of 110/70 mmhg. His O2 saturation was 88 on room air.

His CXR shows lobar pneumonia. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 x10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	2 x10^{9} /L	(1.5-3.5 x 10^{9} /L)
Eosinophils	0.3 x10^{9} /L	(0.04-0.4 x 10^{9} /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	6.5 mmol/L	(2.5-7.1 mmol/L)

What is the management of choice?

○ **Hospital admission with oral amoxicillin**
○ **Home oral amoxicillin and request sputum and blood culture**
● **Home oral amoxicillin plus azithromycin**
○ **Home oral amoxicillin**
○ **Hospital admission with oral amoxicillin plus azithromycin**

Description

NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

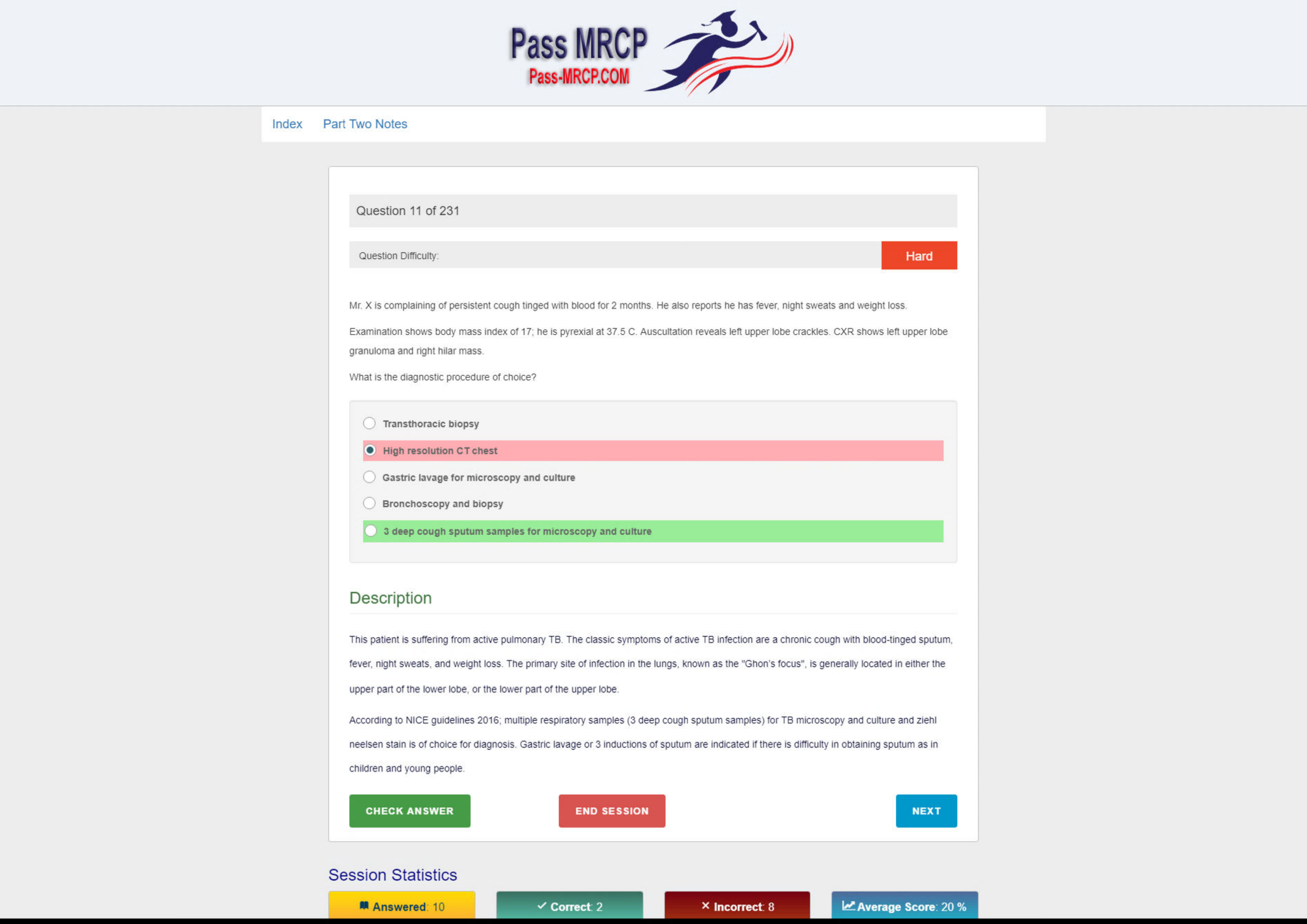
Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1

According to CURB-65 score this patient has a score of 1 due his age so he has mild pneumonia and his mortality is <3%. Consider home-based care with management is by 5 day course of a single antibiotic, amoxicillin in preference to a macrolide or a tetracycline. Do not offer microbiological tests as sputum and blood culture.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 9 ✓ **Correct**: 2 ✕ **Incorrect**: 7 **Average Score**: 22.22 %



Question 11 of 231

Question Difficulty: Hard

Mr. X is complaining of persistent cough tinged with blood for 2 months. He also reports he has fever, night sweats and weight loss.

Examination shows body mass index of 17; he is pyrexial at 37.5 C. Auscultation reveals left upper lobe crackles. CXR shows left upper lobe granuloma and right hilar mass.

What is the diagnostic procedure of choice?

- ○ **Transthoracic biopsy**
- ● **High resolution CT chest**
- ○ **Gastric lavage for microscopy and culture**
- ○ **Bronchoscopy and biopsy**
- ○ **3 deep cough sputum samples for microscopy and culture**

Description

This patient is suffering from active pulmonary TB. The classic symptoms of active TB infection are a chronic cough with blood-tinged sputum, fever, night sweats, and weight loss. The primary site of infection in the lungs, known as the "Ghon's focus", is generally located in either the upper part of the lower lobe, or the lower part of the upper lobe.

According to NICE guidelines 2016; multiple respiratory samples (3 deep cough sputum samples) for TB microscopy and culture and ziehl neelsen stain is of choice for diagnosis. Gastric lavage or 3 inductions of sputum are indicated if there is difficulty in obtaining sputum as in children and young people.

Session Statistics

Answered: 10
✓ **Correct**: 2
✕ **Incorrect**: 8
Average Score: 20 %

Question 12 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the Emergency Department due to sever dyspnea. He has a history of COPD and attends the chest clinic.

Examination shows hyper-inflated chest with reduced breath sounds, scattered rhonchi throughout the chest and a prolonged expiratory phase. Q2 saturation was 75%. Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	5.7 kPa	(4.4-5.9 kPa)
PO 2	7.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	21 mmol/L	(22-28 mmol/L)

He was stabilized on high flow oxygen, nebulizers, antibiotics and intravenous hydrocortisone. 3 hours later his O2 saturation was 90% and his ABG shows:

pH	7.42	(7.35-7.45)
PCO 2	4.8 kPa	(4.4-5.9 kPa)
PO 2	9.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	20 mmol/L	(22-28 mmol/L)

He was stabilized on high flow oxygen, nebulizers, antibiotics and intravenous hydrocortisone. 3 hours later his O2 saturation was 90% and his ABG shows:

pH	7.42	(7.35-7.45)
PCO 2	4.8 kPa	(4.4-5.9 kPa)
PO 2	9.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	20 mmol/L	(22-28 mmol/L)

What is the next step management?

- ○ **Start anticoagulation**
- ○ **Increase oxygen aiming saturation to 90%**
- ○ **Keep current management**
- ● **Increase oxygen aiming saturation to 98%**
- ○ **Add Doxapram**

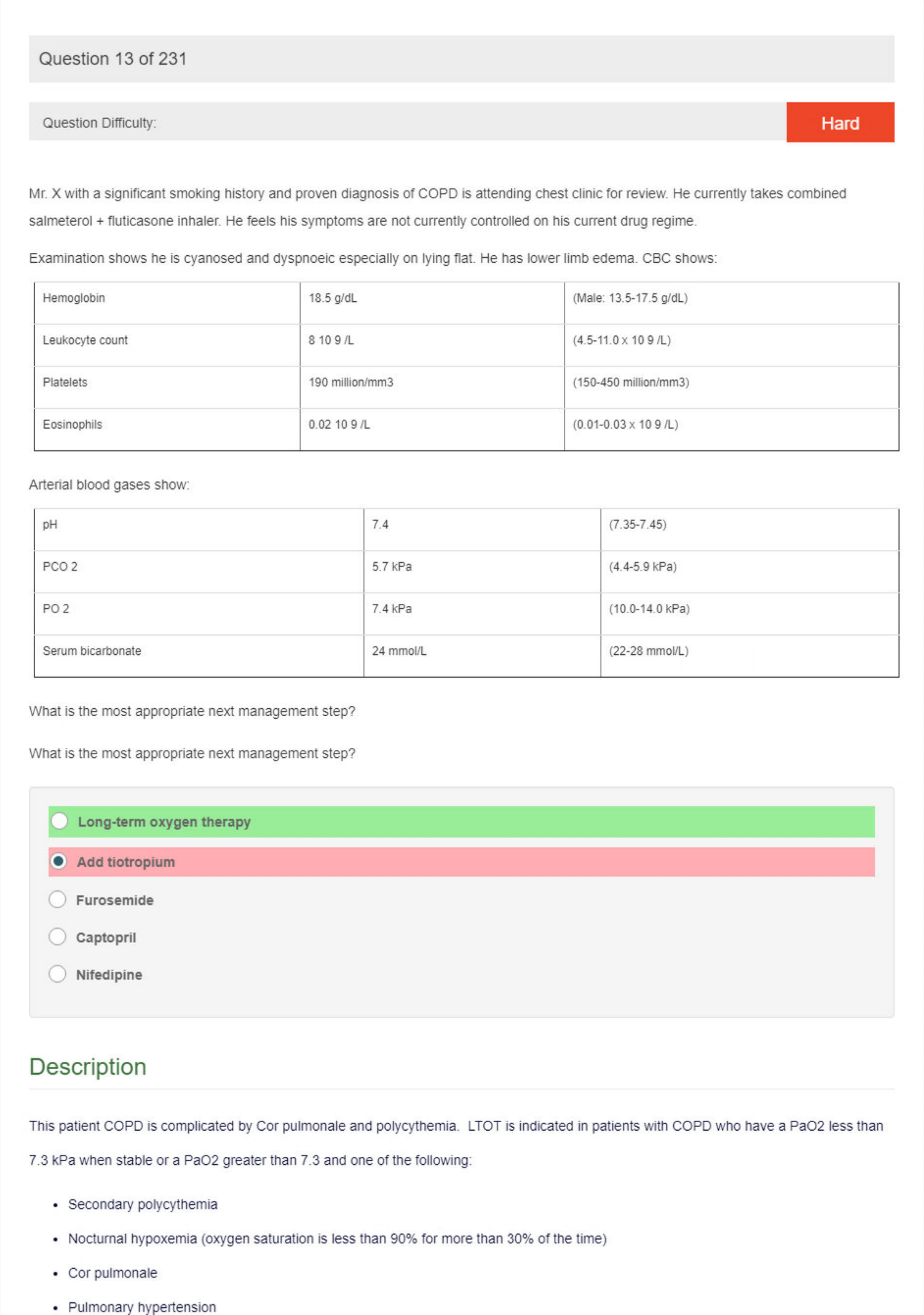
Description

This patient is at risk of hypercapnea so O2 was aimed at 88-92% as higher levels will causes loss of hypoxic drive which is mediated by carotid body. Once the pCO2 is back to normal the target oxygen saturations should be 94-98%.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 11 ✓ **Correct**: 2 ✕ **Incorrect**: 9 **Average Score**: 18.18 %



Question 13 of 231

Question Difficulty: **Hard**

Mr. X with a significant smoking history and proven diagnosis of COPD is attending chest clinic for review. He currently takes combined salmeterol + fluticasone inhaler. He feels his symptoms are not currently controlled on his current drug regime.

Examination shows he is cyanosed and dyspnoeic especially on lying flat. He has lower limb edema. CBC shows:

Hemoglobin	18.5 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 10 9 /L	(4.5-11.0 x 10 9 /L)
Platelets	190 million/mm3	(150-450 million/mm3)
Eosinophils	0.02 10 9 /L	(0.01-0.03 x 10 9 /L)

Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	5.7 kPa	(4.4-5.9 kPa)
PO 2	7.4 kPa	(10.0-14.0 kPa)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

What is the most appropriate next management step?

What is the most appropriate next management step?

○ **Long-term oxygen therapy**

● **Add tiotropium**

○ **Furosemide**

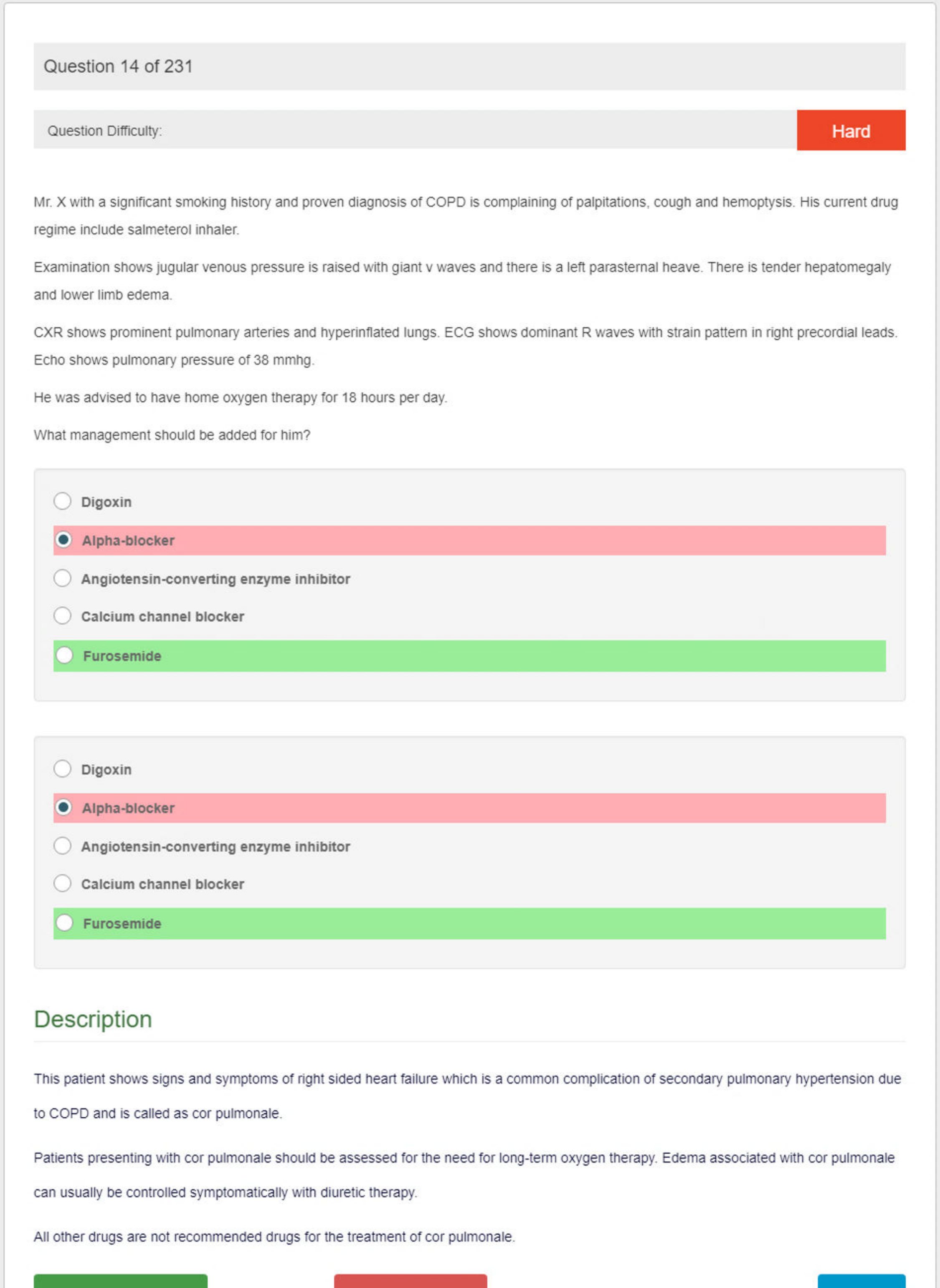
○ **Captopril**

○ **Nifedipine**

Description

This patient COPD is complicated by Cor pulmonale and polycythemia. LTOT is indicated in patients with COPD who have a PaO2 less than 7.3 kPa when stable or a PaO2 greater than 7.3 and one of the following:

- Secondary polycythemia
- Nocturnal hypoxemia (oxygen saturation is less than 90% for more than 30% of the time)
- Cor pulmonale
- Pulmonary hypertension



Question 14 of 231

Question Difficulty: **Hard**

Mr. X with a significant smoking history and proven diagnosis of COPD is complaining of palpitations, cough and hemoptysis. His current drug regime include salmeterol inhaler.

Examination shows jugular venous pressure is raised with giant v waves and there is a left parasternal heave. There is tender hepatomegaly and lower limb edema.

CXR shows prominent pulmonary arteries and hyperinflated lungs. ECG shows dominant R waves with strain pattern in right precordial leads. Echo shows pulmonary pressure of 38 mmhg.

He was advised to have home oxygen therapy for 18 hours per day.

What management should be added for him?

- ○ **Digoxin**
- ● **Alpha-blocker**
- ○ **Angiotensin-converting enzyme inhibitor**
- ○ **Calcium channel blocker**
- ○ **Furosemide**

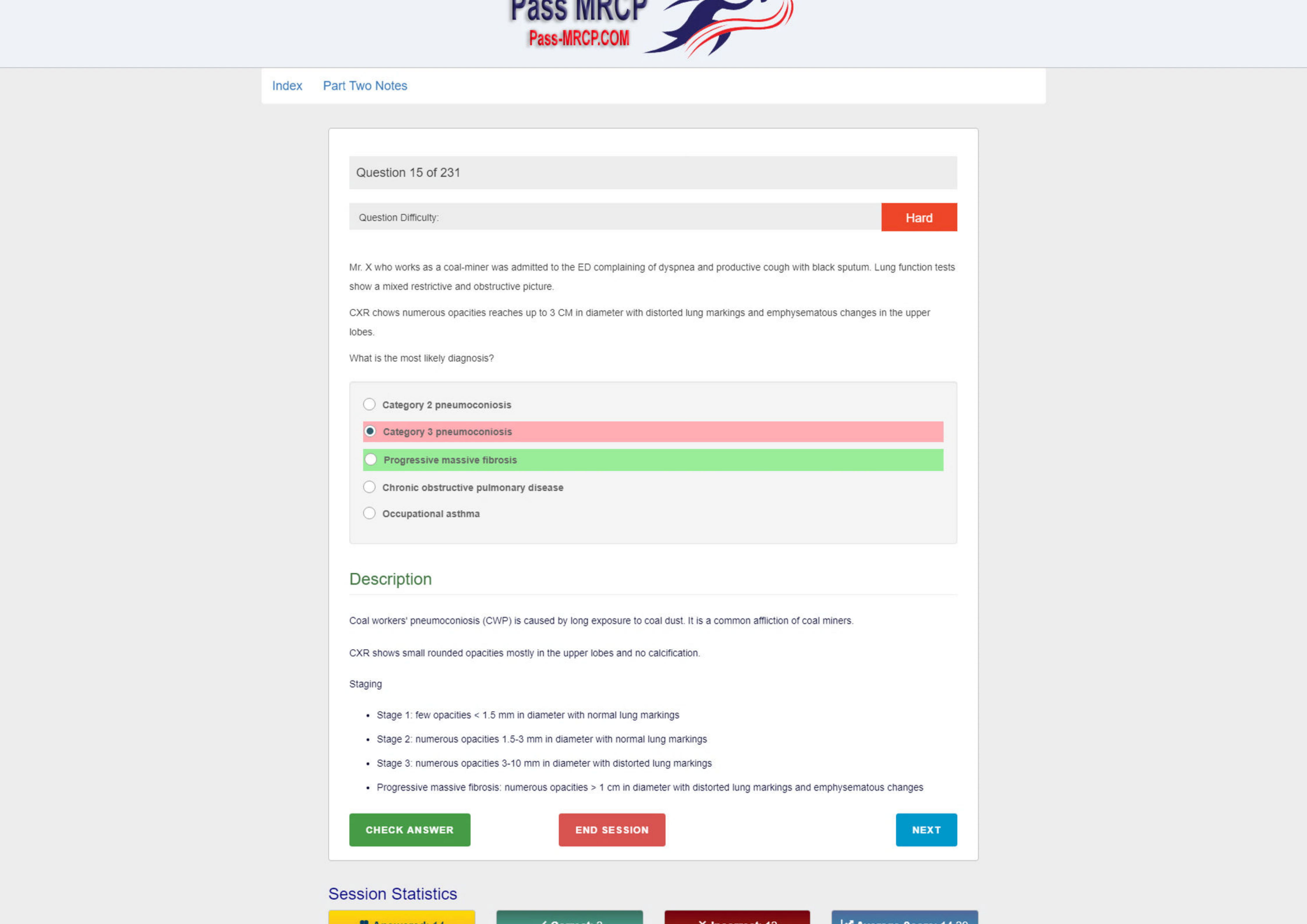
- ○ **Digoxin**
- ● **Alpha-blocker**
- ○ **Angiotensin-converting enzyme inhibitor**
- ○ **Calcium channel blocker**
- ○ **Furosemide**

Description

This patient shows signs and symptoms of right sided heart failure which is a common complication of secondary pulmonary hypertension due to COPD and is called as cor pulmonale.

Patients presenting with cor pulmonale should be assessed for the need for long-term oxygen therapy. Edema associated with cor pulmonale can usually be controlled symptomatically with diuretic therapy.

All other drugs are not recommended drugs for the treatment of cor pulmonale.



Question 15 of 231

Question Difficulty: **Hard**

Mr. X who works as a coal-miner was admitted to the ED complaining of dyspnea and productive cough with black sputum. Lung function tests show a mixed restrictive and obstructive picture.

CXR chows numerous opacities reaches up to 3 CM in diameter with distorted lung markings and emphysematous changes in the upper lobes.

What is the most likely diagnosis?

○ **Category 2 pneumoconiosis**
● **Category 3 pneumoconiosis**
○ **Progressive massive fibrosis**
○ **Chronic obstructive pulmonary disease**
○ **Occupational asthma**

Description

Coal workers' pneumoconiosis (CWP) is caused by long exposure to coal dust. It is a common affliction of coal miners.

CXR shows small rounded opacities mostly in the upper lobes and no calcification.

Staging

- Stage 1: few opacities < 1.5 mm in diameter with normal lung markings
- Stage 2: numerous opacities 1.5-3 mm in diameter with normal lung markings
- Stage 3: numerous opacities 3-10 mm in diameter with distorted lung markings
- Progressive massive fibrosis: numerous opacities > 1 cm in diameter with distorted lung markings and emphysematous changes

Session Statistics

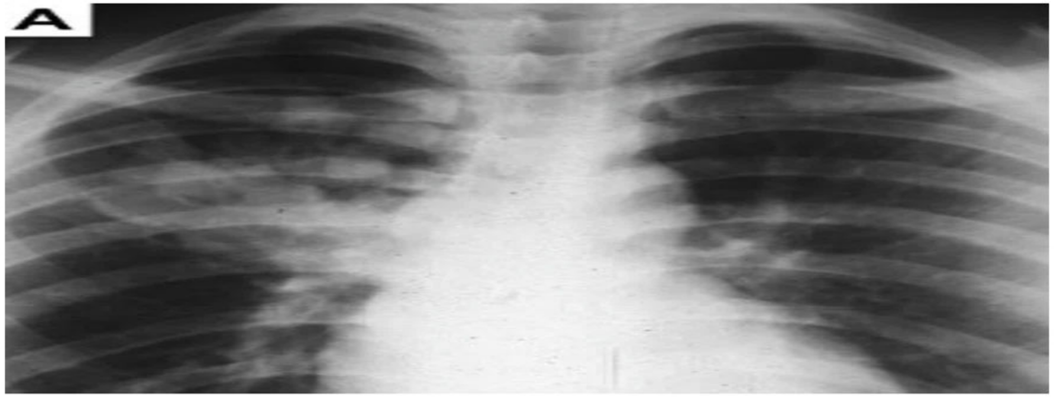
Question 16 of 231

Question Difficulty: **Hard**

Mr. X is complaining gradual deterioration in his asthma control, with increased coughing up of mucus plugs. He has had a long history of asthma since childhood and is maintained on combination inhaler therapy with fluticasone and salmeterol.

Examination shows bilateral wheeze. CXR is shown in the image. CBC shows:

Leukocyte count	7 10^{9}/L	(4.5-11.0 x 10^{9}/L)
Platelets	192 million/mm3	(150-450 million/mm3)
Eosinophils	1.6 10^{9}/L	(0.01-0.03 x 10^{9}/L)
IgE	820 IU/mL	(0-380 IU/mL)



What is the most likely diagnosis?

○ **Atopic asthma**
○ **Loffler syndrome**
○ **COPD**
○ **Asthmatic bronchitis**
● **Allergic bronchopulmonary aspergillosis**

Description

This patient has allergic bronchopulmonary aspergillosis. It is a pulmonary hypersensitivity disorder resulted from bronchial colonization by the aspergillus fumigatus fungus.

It is manifested by worsening bronchial asthma which is resistant to treatment and thick sputum production with brown mucus plugs and upper lobes infiltrates. Exacerbations are more common in the autumn and winter months (Humidity seasons).

Question 17 of 231

Question Difficulty: **Hard**

35 years Mr. X was complaining of 5 days history of malaise, headache, and myalgia followed by 2 days of dry cough. His GP had started a course of amoxicillin/clavulinic but the symptoms failed to resolve.

Examination shows fever of 39 C, BP 120/70 mmHg. Auscultation shows fine crackles were audible in the both mid-zones, heart sounds were normal. There are mucocutaneous lesions with concentric color changes over his upper body.

CXR shows patchy consolidation in both mid-zones. Investigations show:

Hemoglobin	9 g/dL	(Male: 13.5-17.5 g/dL)
Reticulocytes	12%	(0.5-2.4 %)
Direct Coomb test	Positive	
Leukocyte count	12 10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	3.9 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
Direct Coomb test	Positive	
Leukocyte count	12 10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	3.9 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)

What is the most likely cause of his symptoms?

● **Mycoplasma pneumoniae**
○ **Epstein-Barr virus**
○ **Pneumocystis carinii**
○ **Klebsiella pneumoniae**
○ **Haemophilus influenzae**

Description

This patient has a typical pneumonia associated with erythema multiform, mild hepatitis, renal failure and autoimmune hemolytic anemia due to reticulocytosis and positive Coomb test which are features of Mycoplasma pneumoniae infection.

Mycoplasma pneumonia is a cause of community acquired pneumonia which often affects younger patients. It is characterized by the absence of a peptidoglycan cell wall and resulting resistance to B-lactam antibacterial agents.

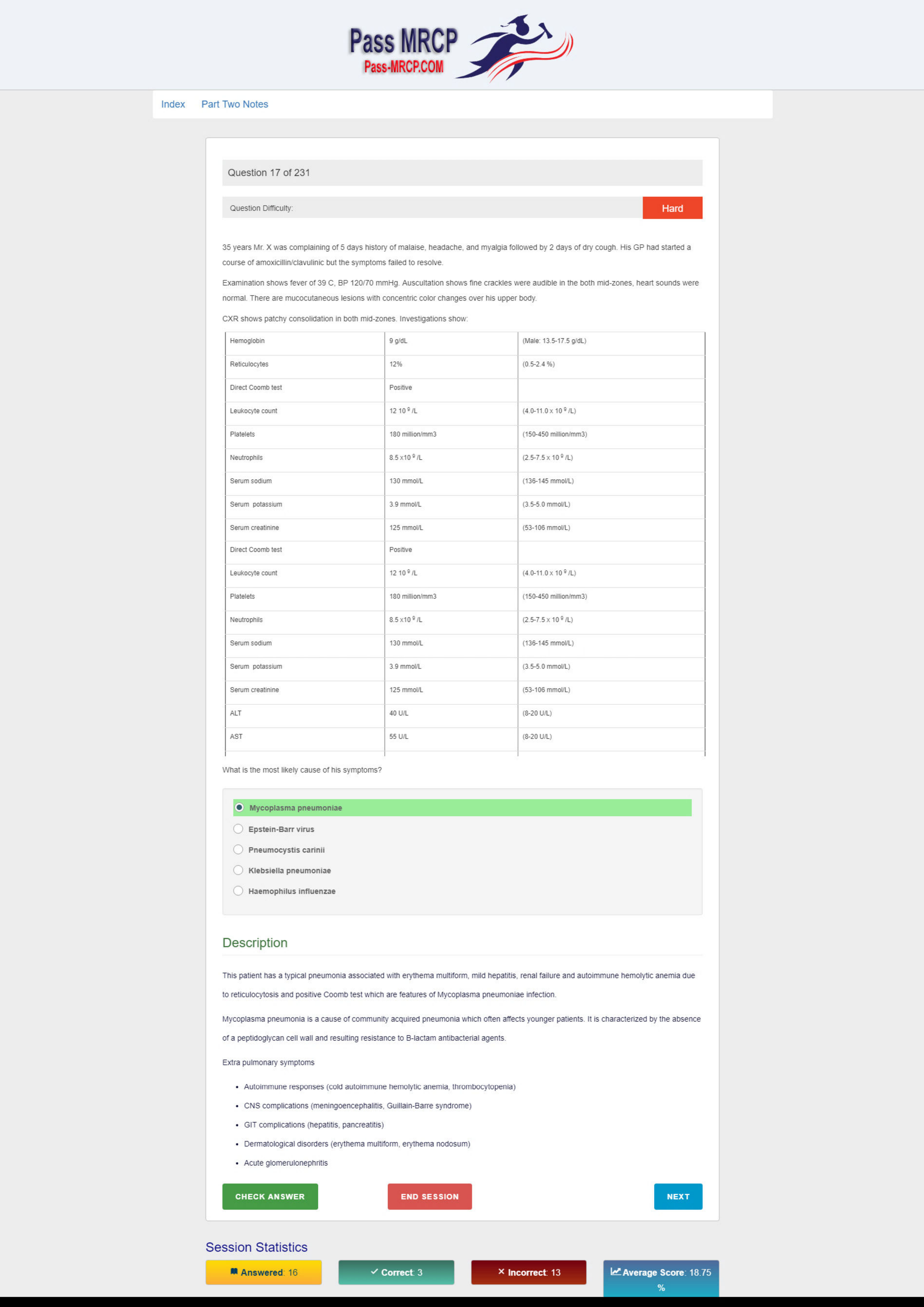
Extra pulmonary symptoms

- Autoimmune responses (cold autoimmune hemolytic anemia, thrombocytopenia)
- CNS complications (meningoencephalitis, Guillain-Barre syndrome)
- GIT complications (hepatitis, pancreatitis)
- Dermatological disorders (erythema multiform, erythema nodosum)
- Acute glomerulonephritis

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 16 ✓ **Correct**: 3 ✕ **Incorrect**: 13 **Average Score**: 18.75 %



Question 17 of 231

Question Difficulty: **Hard**

35 years Mr. X was complaining of 5 days history of malaise, headache, and myalgia followed by 2 days of dry cough. His GP had started a course of amoxicillin/clavulinic but the symptoms failed to resolve.

Examination shows fever of 39 C, BP 120/70 mmHg. Auscultation shows fine crackles were audible in the both mid-zones, heart sounds were normal. There are mucocutaneous lesions with concentric color changes over his upper body.

CXR shows patchy consolidation in both mid-zones. Investigations show:

Hemoglobin	9 g/dL	(Male: 13.5-17.5 g/dL)
Reticulocytes	12%	(0.5-2.4 %)
Direct Coomb test	Positive	
Leukocyte count	12 10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	3.9 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
Direct Coomb test	Positive	
Leukocyte count	12 10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	3.9 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)

What is the most likely cause of his symptoms?

● **Mycoplasma pneumoniae**
○ **Epstein-Barr virus**
○ **Pneumocystis carinii**
○ **Klebsiella pneumoniae**
○ **Haemophilus influenzae**

Description

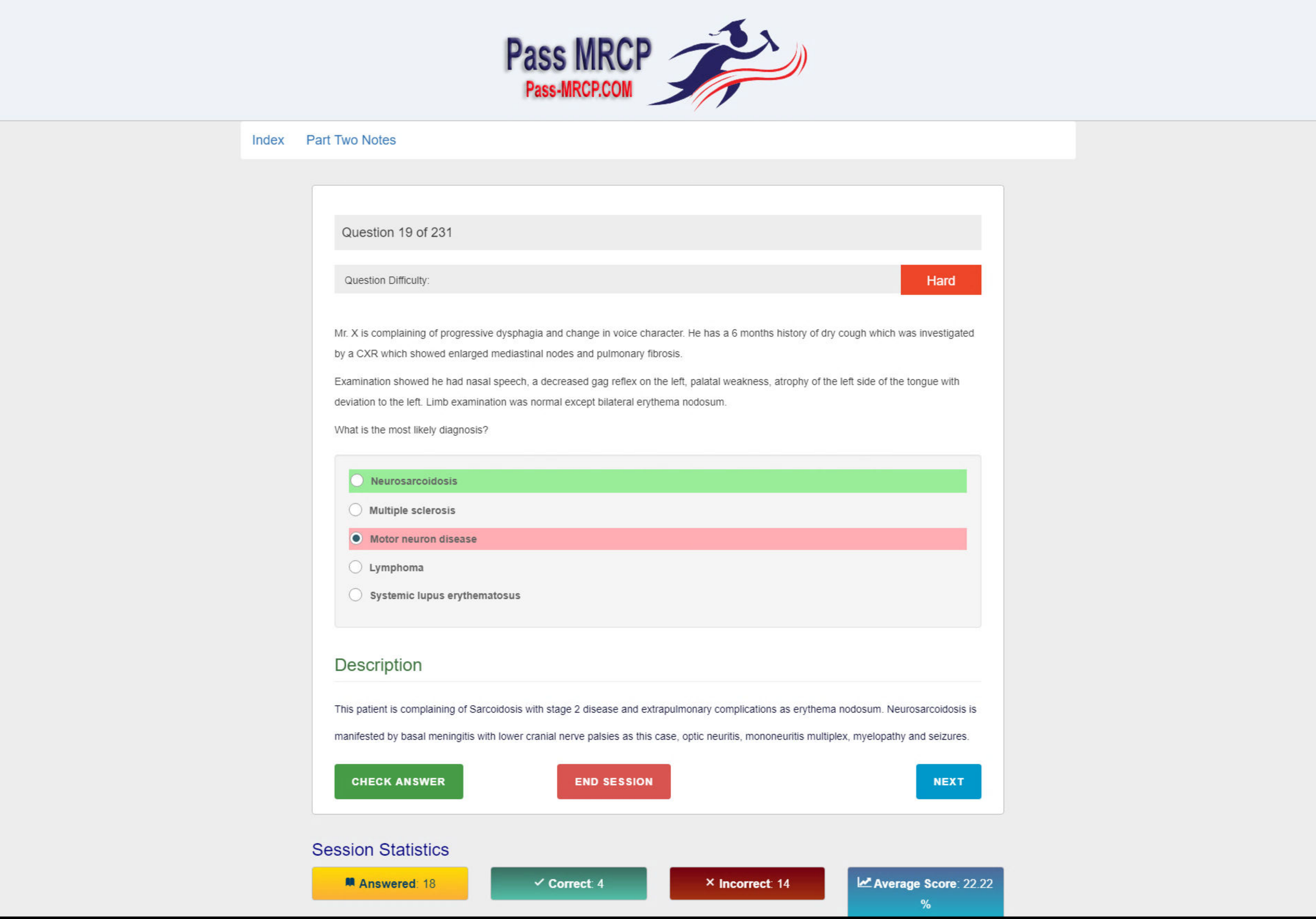
This patient has a typical pneumonia associated with erythema multiform, mild hepatitis, renal failure and autoimmune hemolytic anemia due to reticulocytosis and positive Coomb test which are features of Mycoplasma pneumoniae infection.

Mycoplasma pneumonia is a cause of community acquired pneumonia which often affects younger patients. It is characterized by the absence of a peptidoglycan cell wall and resulting resistance to B-lactam antibacterial agents.

Extra pulmonary symptoms

- Autoimmune responses (cold autoimmune hemolytic anemia, thrombocytopenia)
- CNS complications (meningoencephalitis, Guillain-Barre syndrome)
- GIT complications (hepatitis, pancreatitis)
- Dermatological disorders (erythema multiform, erythema nodosum)
- Acute glomerulonephritis

Session Statistics



Question 19 of 231

Question Difficulty: Hard

Mr. X is complaining of progressive dysphagia and change in voice character. He has a 6 months history of dry cough which was investigated by a CXR which showed enlarged mediastinal nodes and pulmonary fibrosis.

Examination showed he had nasal speech, a decreased gag reflex on the left, palatal weakness, atrophy of the left side of the tongue with deviation to the left. Limb examination was normal except bilateral erythema nodosum.

What is the most likely diagnosis?

- ○ **Neurosarcoidosis**
- ○ **Multiple sclerosis**
- ● **Motor neuron disease**
- ○ **Lymphoma**
- ○ **Systemic lupus erythematosus**

Description

This patient is complaining of Sarcoidosis with stage 2 disease and extrapulmonary complications as erythema nodosum. Neurosarcoidosis is manifested by basal meningitis with lower cranial nerve palsies as this case, optic neuritis, mononeuritis multiplex, myelopathy and seizures.

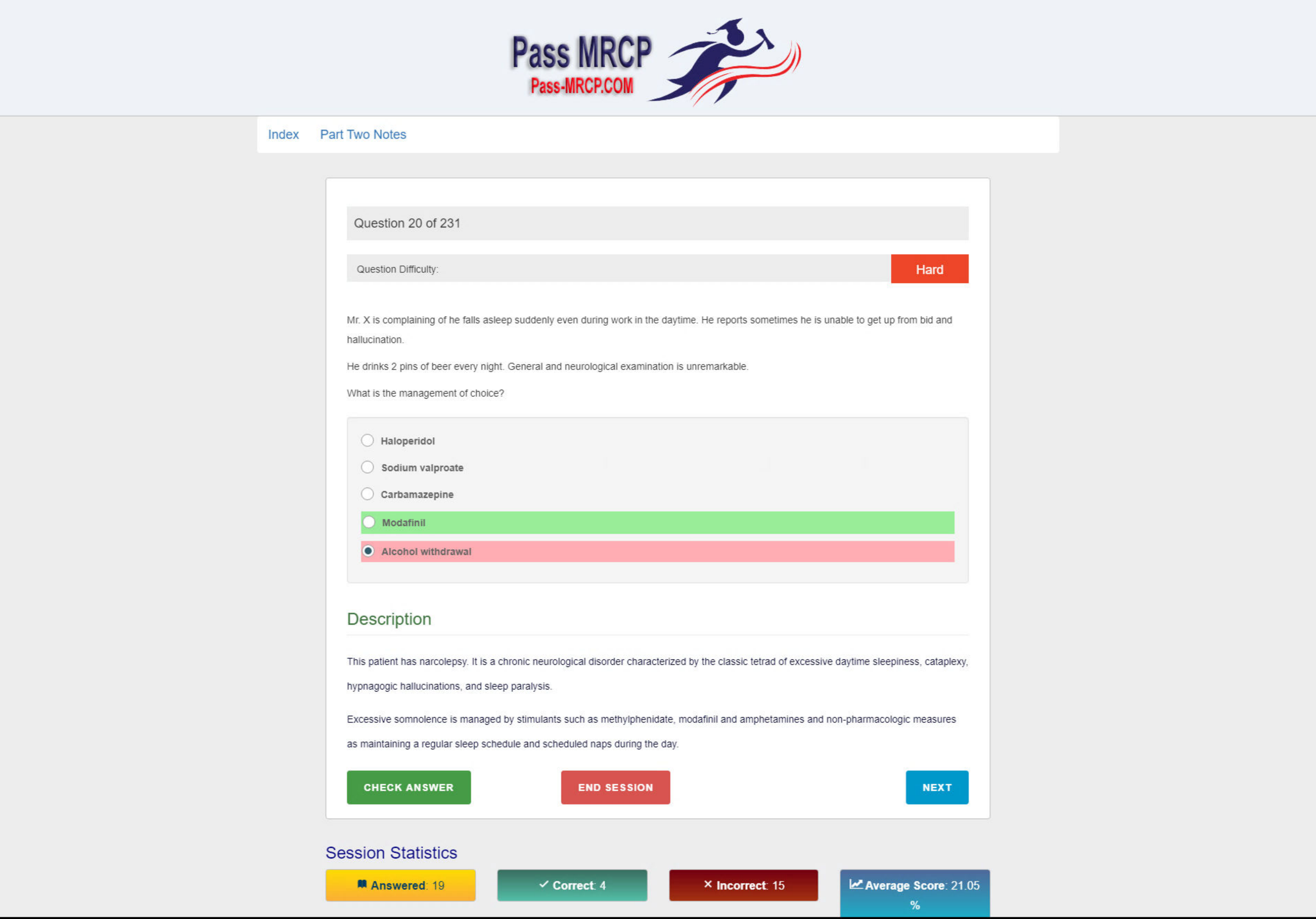
Session Statistics

Answered: 18

✓ **Correct**: 4

✕ **Incorrect**: 14

Average Score: 22.22 %



Question 20 of 231

Question Difficulty: Hard

Mr. X is complaining of he falls asleep suddenly even during work in the daytime. He reports sometimes he is unable to get up from bid and hallucination.

He drinks 2 pins of beer every night. General and neurological examination is unremarkable.

What is the management of choice?

- ○ Haloperidol
- ○ Sodium valproate
- ○ Carbamazepine
- ○ Modafinil
- ● Alcohol withdrawal

Description

This patient has narcolepsy. It is a chronic neurological disorder characterized by the classic tetrad of excessive daytime sleepiness, cataplexy, hypnagogic hallucinations, and sleep paralysis.

Excessive somnolence is managed by stimulants such as methylphenidate, modafinil and amphetamines and non-pharmacologic measures as maintaining a regular sleep schedule and scheduled naps during the day.

Session Statistics

Answered: 19
✓ Correct: 4
✕ Incorrect: 15
Average Score: 21.05 %

Question 21 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to fever, cough, and dyspnea and pleuritic chest pain for the past 2 days. He has no past medical history except diagnosed hyperthyroidism 2 months ago and on management with carbimazole.

Examination shows he is dyspnoeic with BP 110/70 mmhg and temp of 38.5 c. Auscultations reveal widespread inspiratory crepitations.

CXR shows diffuse consolidation and nodular infiltrate. Investigations show:

Hemoglobin	11 g/dL	(13.5-17.5 g/dL)
Mean corpuscular volume	75 fl	80-100 fl
Leukocyte count	4.5 10^{9}/L	(4.5-11.0 x 10^{9}/L)
Platelets	160 million/mm3	(150-450 million/mm3)
Neutrophils	1.2 10^{9}/L	(2-8 x 10^{9}/L)
Eosinophils	0.2 10^{9}/L	(0.01-0.4 x 10^{9}/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	125 µmol/L	(53-106 µmol/L)

Platelets	160 million/mm3	(150-450 million/mm3)
Neutrophils	1.2 10^{9}/L	(2-8 x 10^{9}/L)
Eosinophils	0.2 10^{9}/L	(0.01-0.4 x 10^{9}/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	125 µmol/L	(53-106 µmol/L)

What is the most likely diagnosis?

○ **Legionella pneumonia**
○ **Mycoplasma pneumonia**
○ **Invasive aspergillosis** ✓
○ **Aspergilloma**
● **Pulmonary tuberculosis** ✗

Description

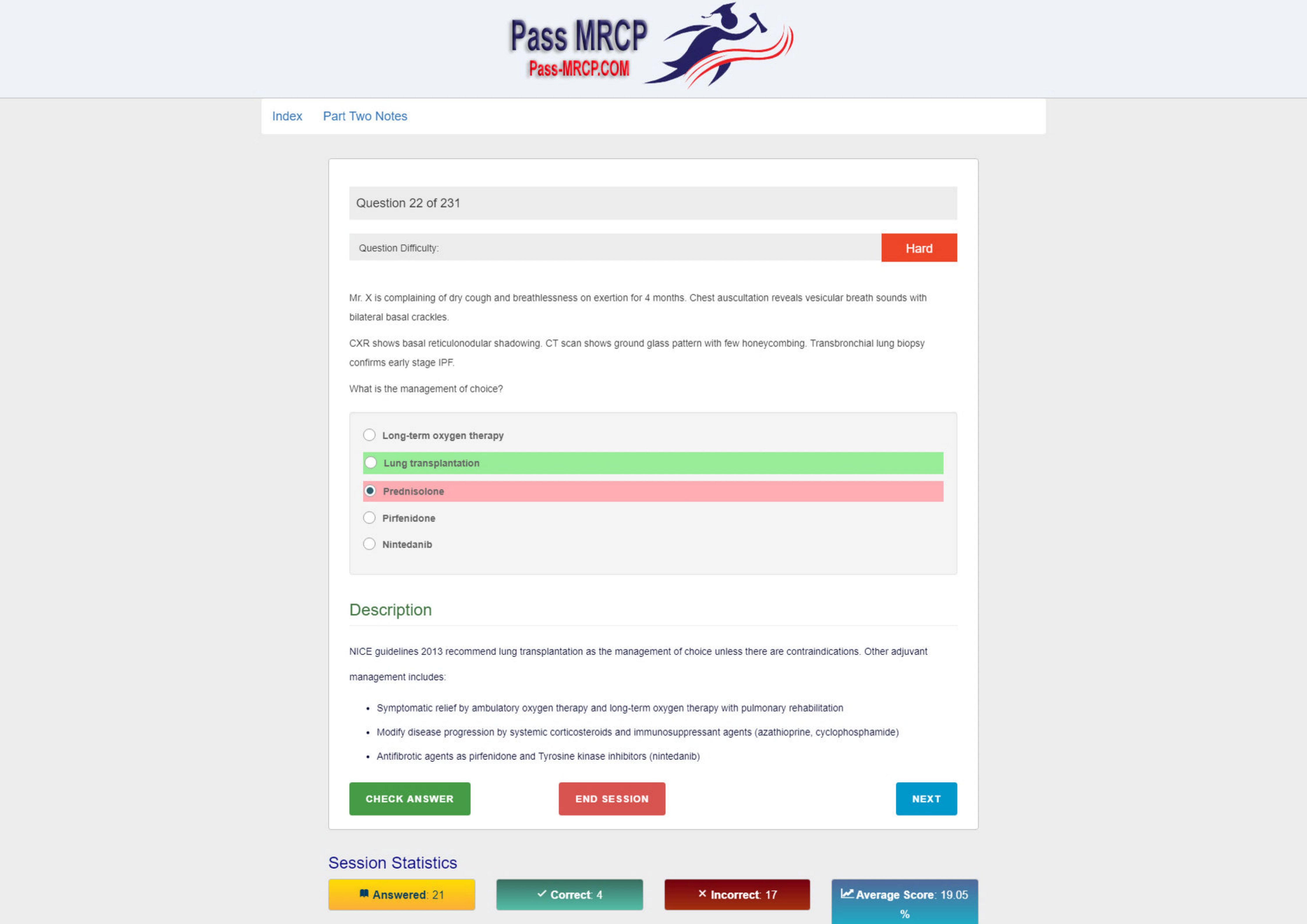
This patient has neutropenia usually due to the use of carbimazole. He is complaining of rapid deterioration respiratory failure and infection and renal failure. Neutropenia makes patient more susceptible to fungal infection.

Invasive aspergillosis occurs due to hematogenous spread of the fungus aspergillus spores to major organs in patients with prolonged neutropenia or immunosuppression. There is high mortality rate associated with invasive aspergillosis.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 20 ✓ **Correct**: 4 ✕ **Incorrect**: 16 **Average Score**: 20 %



Question 22 of 231

Question Difficulty: Hard

Mr. X is complaining of dry cough and breathlessness on exertion for 4 months. Chest auscultation reveals vesicular breath sounds with bilateral basal crackles.

CXR shows basal reticulonodular shadowing. CT scan shows ground glass pattern with few honeycombing. Transbronchial lung biopsy confirms early stage IPF.

What is the management of choice?

○ **Long-term oxygen therapy**

○ **Lung transplantation**

● **Prednisolone**

○ **Pirfenidone**

○ **Nintedanib**

Description

NICE guidelines 2013 recommend lung transplantation as the management of choice unless there are contraindications. Other adjuvant management includes:

- Symptomatic relief by ambulatory oxygen therapy and long-term oxygen therapy with pulmonary rehabilitation
- Modify disease progression by systemic corticosteroids and immunosuppressant agents (azathioprine, cyclophosphamide)
- Antifibrotic agents as pirfenidone and Tyrosine kinase inhibitors (nintedanib)

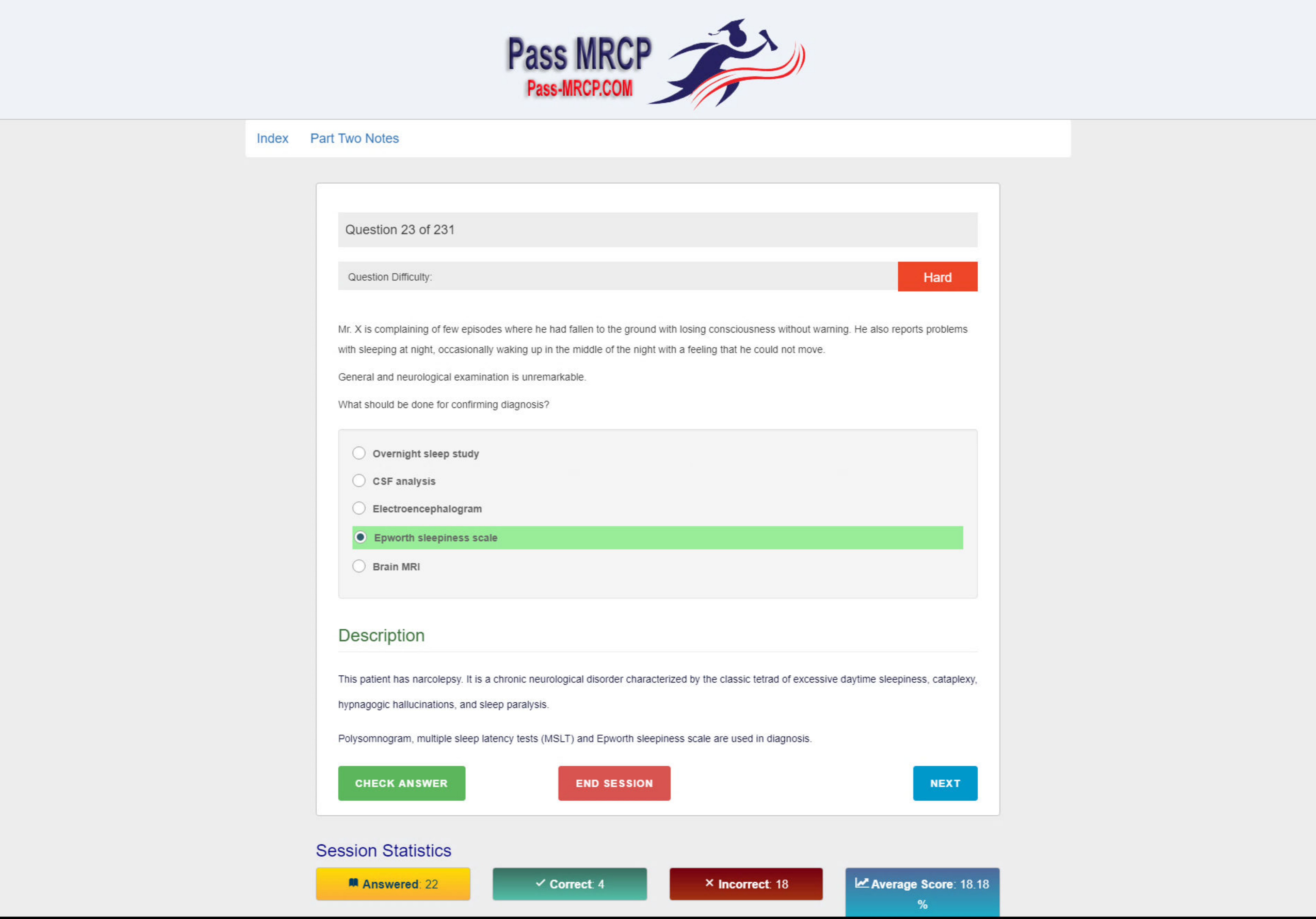
Session Statistics

Answered: 21

✓ **Correct**: 4

✕ **Incorrect**: 17

Average Score: 19.05 %



Question 23 of 231

Question Difficulty: Hard

Mr. X is complaining of few episodes where he had fallen to the ground with losing consciousness without warning. He also reports problems with sleeping at night, occasionally waking up in the middle of the night with a feeling that he could not move.

General and neurological examination is unremarkable.

What should be done for confirming diagnosis?

- ○ **Overnight sleep study**
- ○ **CSF analysis**
- ○ **Electroencephalogram**
- ● **Epworth sleepiness scale**
- ○ **Brain MRI**

Description

This patient has narcolepsy. It is a chronic neurological disorder characterized by the classic tetrad of excessive daytime sleepiness, cataplexy, hypnagogic hallucinations, and sleep paralysis.

Polysomnogram, multiple sleep latency tests (MSLT) and Epworth sleepiness scale are used in diagnosis.

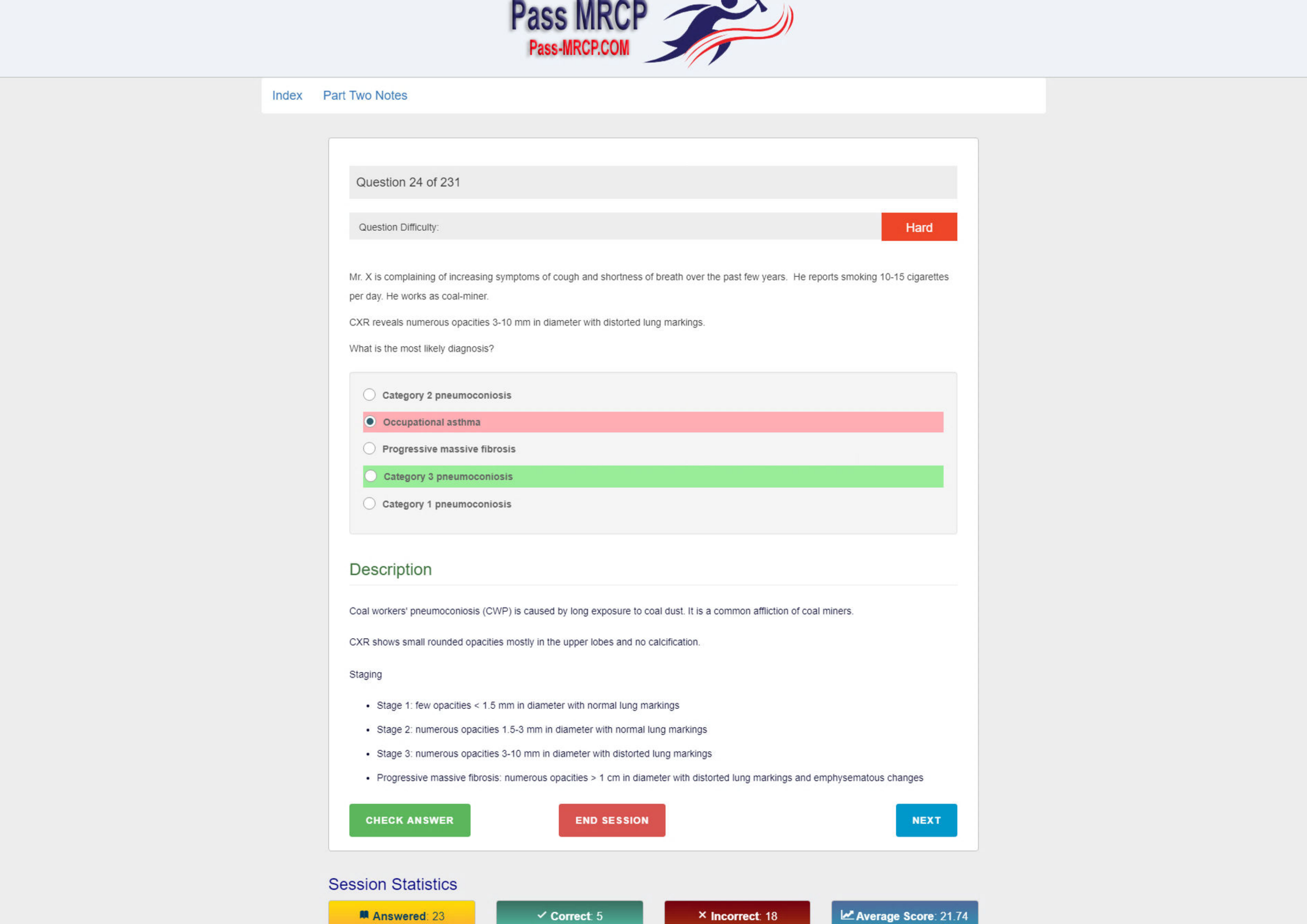
Session Statistics

Answered: 22

✓ **Correct**: 4

✕ **Incorrect**: 18

Average Score: 18.18 %



Question 24 of 231

Question Difficulty: **Hard**

Mr. X is complaining of increasing symptoms of cough and shortness of breath over the past few years. He reports smoking 10-15 cigarettes per day. He works as coal-miner.

CXR reveals numerous opacities 3-10 mm in diameter with distorted lung markings.

What is the most likely diagnosis?

○ **Category 2 pneumoconiosis**

● **Occupational asthma**

○ **Progressive massive fibrosis**

○ **Category 3 pneumoconiosis**

○ **Category 1 pneumoconiosis**

Description

Coal workers' pneumoconiosis (CWP) is caused by long exposure to coal dust. It is a common affliction of coal miners.

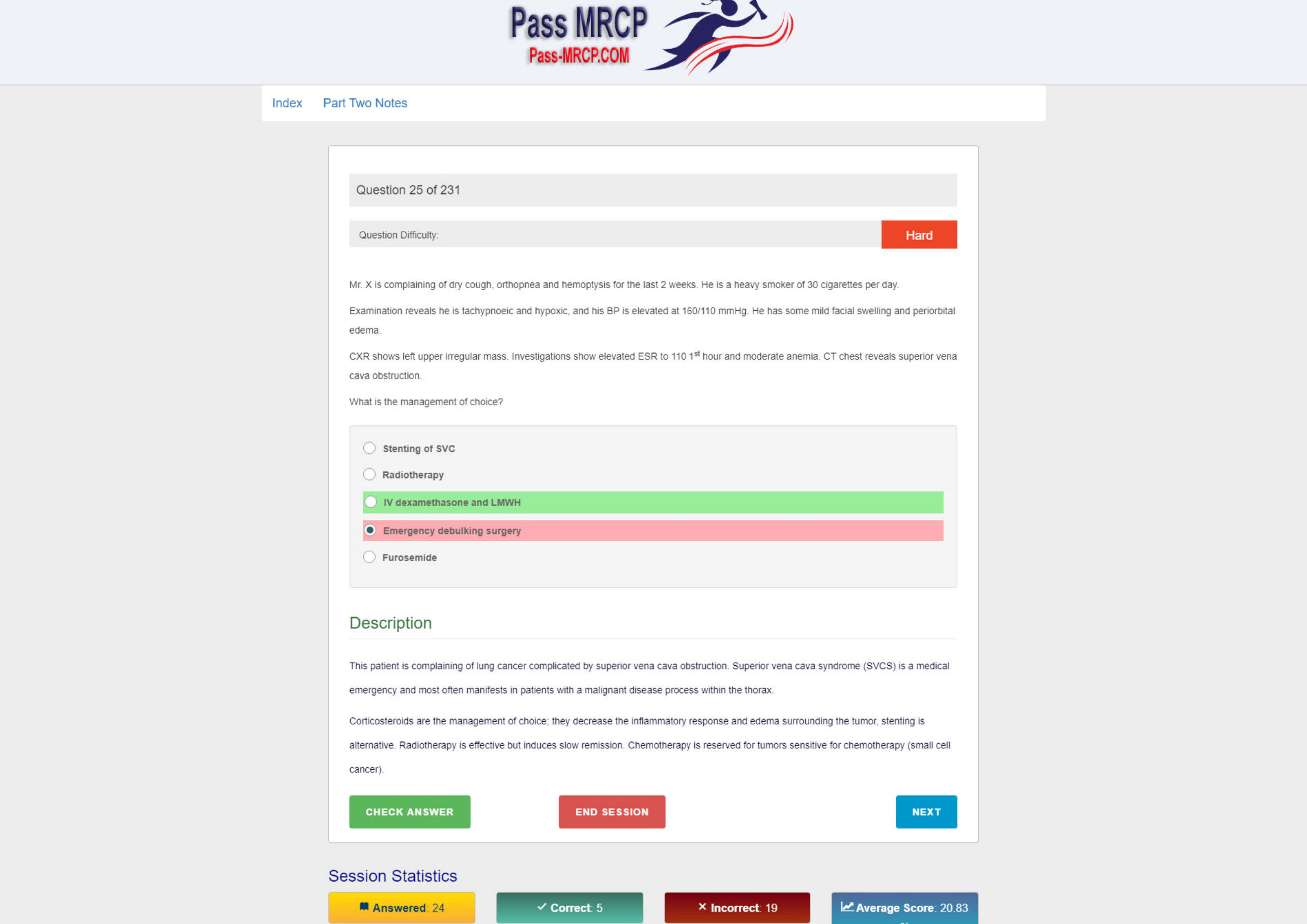
CXR shows small rounded opacities mostly in the upper lobes and no calcification.

Staging

- Stage 1: few opacities < 1.5 mm in diameter with normal lung markings
- Stage 2: numerous opacities 1.5-3 mm in diameter with normal lung markings
- Stage 3: numerous opacities 3-10 mm in diameter with distorted lung markings
- Progressive massive fibrosis: numerous opacities > 1 cm in diameter with distorted lung markings and emphysematous changes

Session Statistics

Answered: 23
Correct: 5
Incorrect: 18
Average Score: 21.74



Question 25 of 231

Question Difficulty: Hard

Mr. X is complaining of dry cough, orthopnea and hemoptysis for the last 2 weeks. He is a heavy smoker of 30 cigarettes per day.

Examination reveals he is tachypnoeic and hypoxic, and his BP is elevated at 160/110 mmHg. He has some mild facial swelling and periorbital edema.

CXR shows left upper irregular mass. Investigations show elevated ESR to 110 1st hour and moderate anemia. CT chest reveals superior vena cava obstruction.

What is the management of choice?

- ○ Stenting of SVC
- ○ Radiotherapy
- ○ IV dexamethasone and LMWH
- ● Emergency debulking surgery
- ○ Furosemide

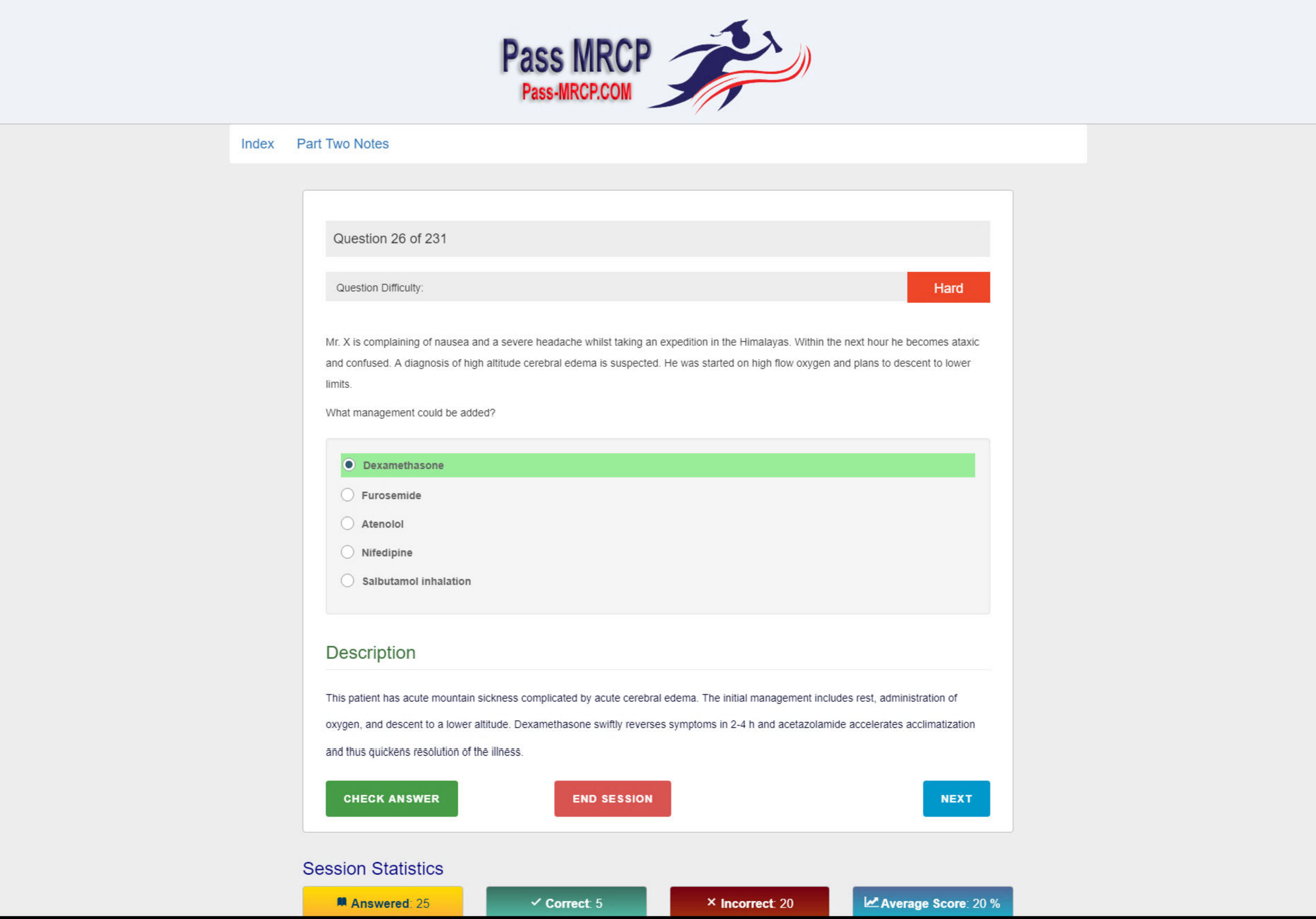
Description

This patient is complaining of lung cancer complicated by superior vena cava obstruction. Superior vena cava syndrome (SVCS) is a medical emergency and most often manifests in patients with a malignant disease process within the thorax.

Corticosteroids are the management of choice; they decrease the inflammatory response and edema surrounding the tumor, stenting is alternative. Radiotherapy is effective but induces slow remission. Chemotherapy is reserved for tumors sensitive for chemotherapy (small cell cancer).

Session Statistics

Answered: 24
Correct: 5
Incorrect: 19
Average Score: 20.83



Question 26 of 231

Question Difficulty: **Hard**

Mr. X is complaining of nausea and a severe headache whilst taking an expedition in the Himalayas. Within the next hour he becomes ataxic and confused. A diagnosis of high altitude cerebral edema is suspected. He was started on high flow oxygen and plans to descent to lower limits.

What management could be added?

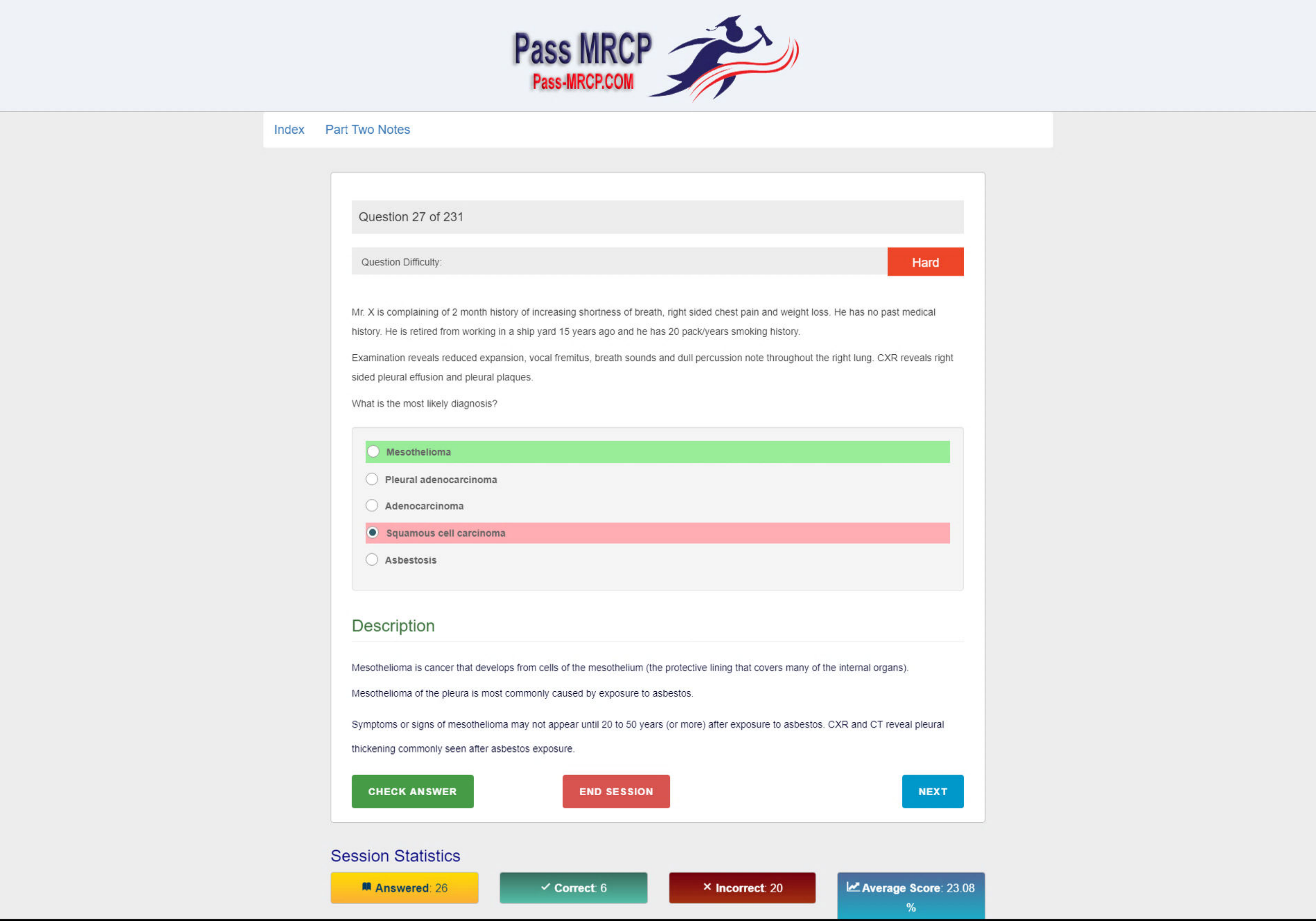
- ● **Dexamethasone**
- ○ **Furosemide**
- ○ **Atenolol**
- ○ **Nifedipine**
- ○ **Salbutamol inhalation**

Description

This patient has acute mountain sickness complicated by acute cerebral edema. The initial management includes rest, administration of oxygen, and descent to a lower altitude. Dexamethasone swiftly reverses symptoms in 2-4 h and acetazolamide accelerates acclimatization and thus quickens resolution of the illness.

Session Statistics

Answered: 25
✓ **Correct**: 5
✕ **Incorrect**: 20
Average Score: 20 %



Question 27 of 231

Question Difficulty: **Hard**

Mr. X is complaining of 2 month history of increasing shortness of breath, right sided chest pain and weight loss. He has no past medical history. He is retired from working in a ship yard 15 years ago and he has 20 pack/years smoking history.

Examination reveals reduced expansion, vocal fremitus, breath sounds and dull percussion note throughout the right lung. CXR reveals right sided pleural effusion and pleural plaques.

What is the most likely diagnosis?

- ○ **Mesothelioma**
- ○ **Pleural adenocarcinoma**
- ○ **Adenocarcinoma**
- ● **Squamous cell carcinoma**
- ○ **Asbestosis**

Description

Mesothelioma is cancer that develops from cells of the mesothelium (the protective lining that covers many of the internal organs).

Mesothelioma of the pleura is most commonly caused by exposure to asbestos.

Symptoms or signs of mesothelioma may not appear until 20 to 50 years (or more) after exposure to asbestos. CXR and CT reveal pleural thickening commonly seen after asbestos exposure.

Session Statistics

Answered: 26

✓ **Correct**: 6

× **Incorrect**: 20

Average Score: 23.08 %

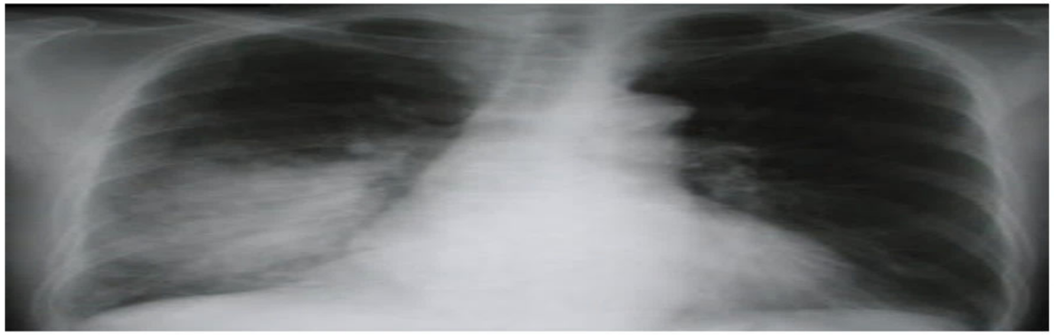
Question 28 of 231

Question Difficulty: **Hard**

Mr. X is complaining of a 2-day history of cough associated with fever. He also complains of right-sided chest pain on inspiration.

Examination shows slightly cyanosis, temperature of 38 C, and respiratory rate of 38/min and BP of 100/70 mm/Hg. He has basal crepitations and dullness to percussion at the right lung base. CXR is shown in the images. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	2 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.3 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)



What is the most likely diagnosis?

- ○ **Atelectasis**
- ○ **Lobar pneumonia**
- ○ **Mesothelioma**
- ○ **Viral pneumonia**
- ● **Pneumothorax**

Description

This is a classic presentation of pneumonia by cough and fever with the variable presence of sputum production, dyspnea and pleurisy.

Bronchial breathing with crackles on auscultation over the affected area during inspiration is also pathognomonic.

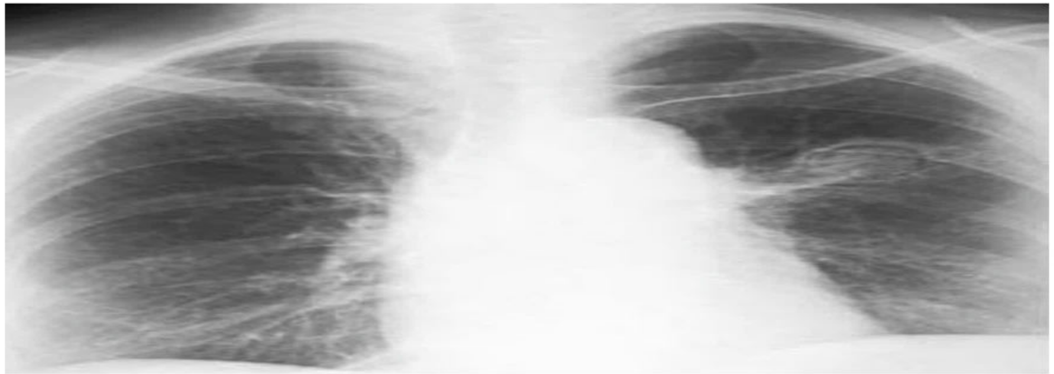
The X-ray shows right lobar pneumonia. Elevated WBC indicates bacterial cause. Viral pneumonia is associated with bronchopneumonia.

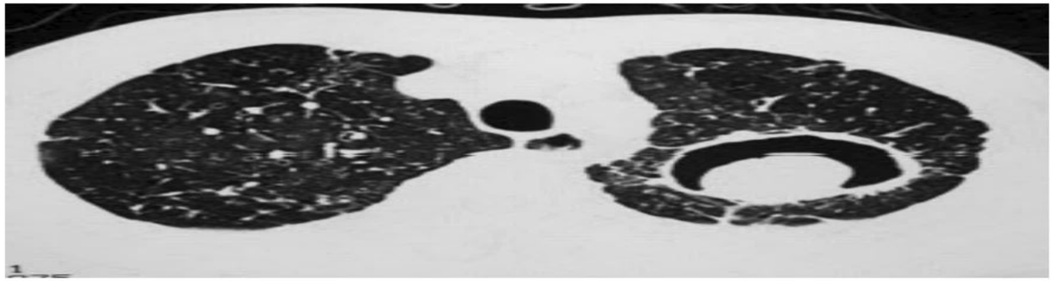
Question 29 of 231

Question Difficulty: **Hard**

Mr. X is complaining of lethargy, weight loss, night sweats and intermittent hemoptysis. He has a previous history of TB 6 years ago and has no TB reactivation previously.

Examination shows he is apyrexial with BP of 142/87 mmHg. CXR and CT chest are shown in the images.





What is the most likely diagnosis?

- ○ **Mesothelioma**
- ○ **Reactivation of pulmonary tuberculosis**
- ● **Lung carcinoma**
- ○ **Aspergilloma**
- ○ **Lung abscess**

Description

The CT and CXR show a ball within a cavity indicating Aspergilloma as a diagnosis. Aspergilloma (mycetoma) is a fungus ball which colonizes on an existing lung cavity (TB, lung cancer or cystic fibrosis). It is usually asymptomatic but may cause cough and hemoptysis.

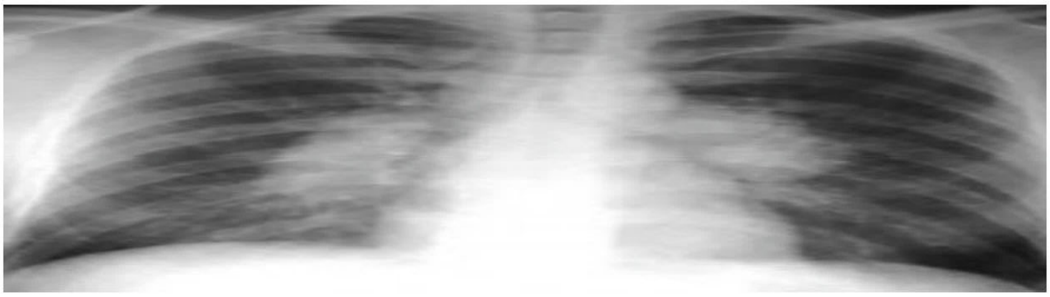
Question 30 of 231

Question Difficulty: **Hard**

Mr. X is complaining of joint pains and sore eyes for 1 month. Joint examination reveals tenderness in the knee and ankle joints. Examination of the lower limbs reveals a raised, red and tender rash on both shins.

CXR is shown in the image. Investigations show:

Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum calcium	3.1 mmol/L	(2.1-2.8 mmol/L)
Serum creatinine	80 mmol/L	(53-106 mmol/L)
ALT	16 U/L	(8-20 U/L)
Leukocyte count	8 X10^{9} /L	(4.0-11.0 x 10^{9} /L)
ANA	negative	



What is the most likely diagnosis?

○ **Systemic lupus erythematosis**

○ **Reiter syndrome**

○ **Goodpasture syndrome**

● **Sarcoidosis**

○ **Gonococcal infection**

Description

Sarcoidosis is a disease involving abnormal collections of inflammatory cells that can form non-caseating granulomas in multiple organs most often located in the lungs.

It is manifested by fever and polyarthralgia. Dermatologic manifestations as erythema nodosum and anterior or posterior uveitis.

CXR shows hilar lymphadenopathy. Hypercalcemia may occur.

CHECK ANSWER END SESSION NEXT

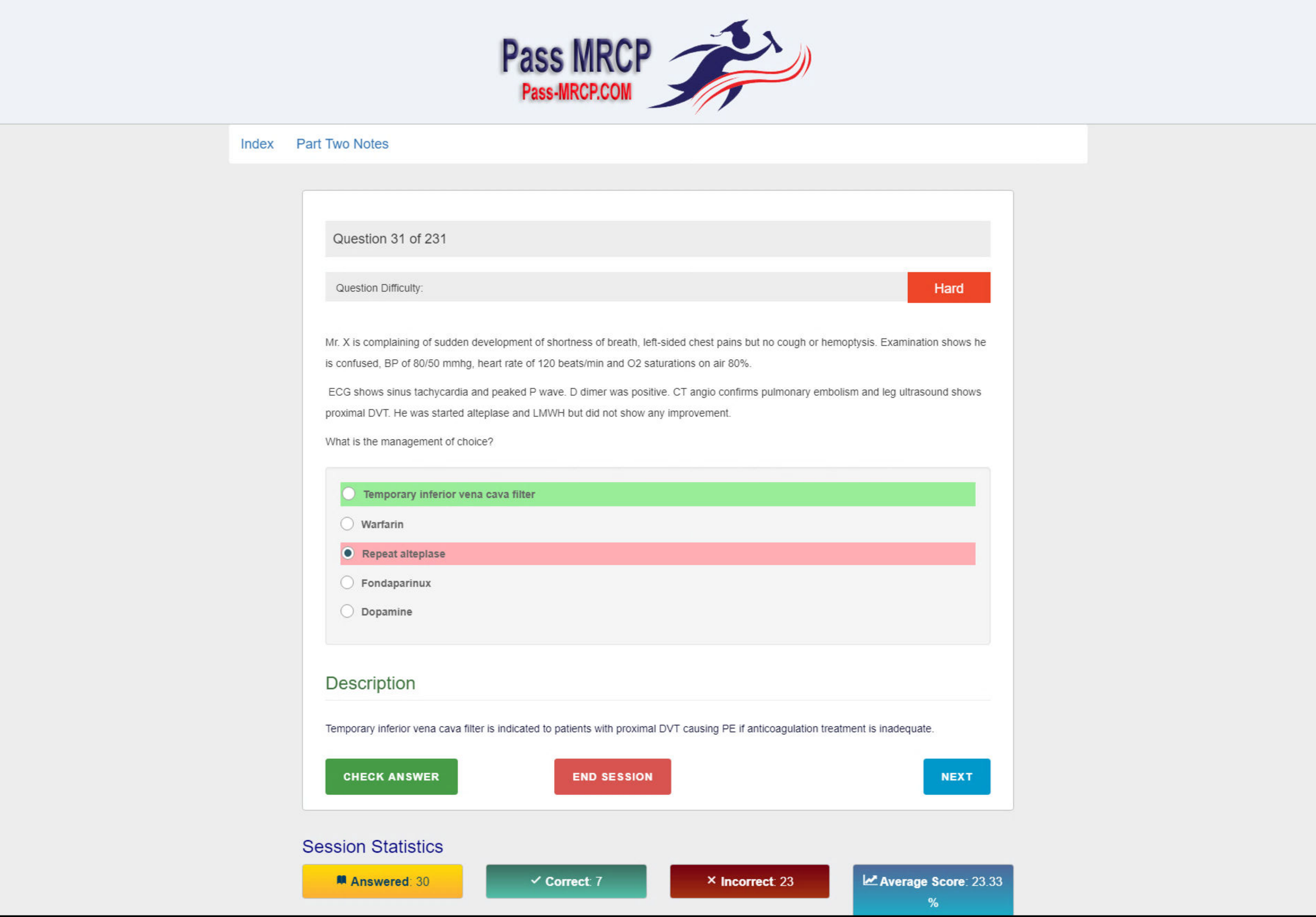
Session Statistics

Answered: 29

✓ **Correct**: 6

✕ **Incorrect**: 23

Average Score: 20.69 %



Question 31 of 231

Question Difficulty: **Hard**

Mr. X is complaining of sudden development of shortness of breath, left-sided chest pains but no cough or hemoptysis. Examination shows he is confused, BP of 80/50 mmhg, heart rate of 120 beats/min and O2 saturations on air 80%.

ECG shows sinus tachycardia and peaked P wave. D dimer was positive. CT angio confirms pulmonary embolism and leg ultrasound shows proximal DVT. He was started alteplase and LMWH but did not show any improvement.

What is the management of choice?

- ○ **Temporary inferior vena cava filter**
- ○ **Warfarin**
- ● **Repeat alteplase**
- ○ **Fondaparinux**
- ○ **Dopamine**

Description

Temporary inferior vena cava filter is indicated to patients with proximal DVT causing PE if anticoagulation treatment is inadequate.

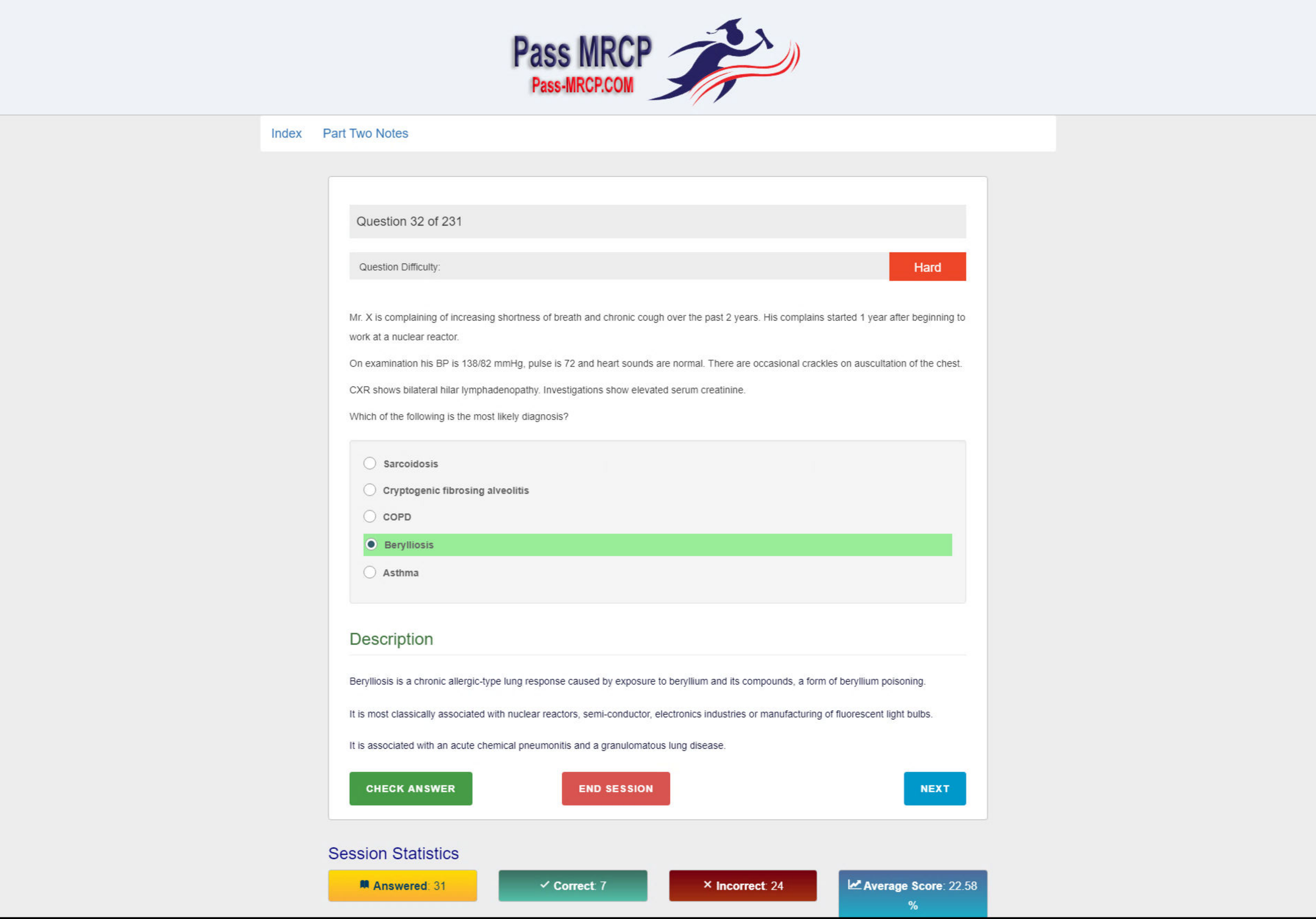
Session Statistics

Answered: 30

✓ **Correct**: 7

✕ **Incorrect**: 23

Average Score: 23.33 %



Question 32 of 231

Question Difficulty: Hard

Mr. X is complaining of increasing shortness of breath and chronic cough over the past 2 years. His complains started 1 year after beginning to work at a nuclear reactor.

On examination his BP is 138/82 mmHg, pulse is 72 and heart sounds are normal. There are occasional crackles on auscultation of the chest.

CXR shows bilateral hilar lymphadenopathy. Investigations show elevated serum creatinine.

Which of the following is the most likely diagnosis?

- ○ **Sarcoidosis**
- ○ **Cryptogenic fibrosing alveolitis**
- ○ **COPD**
- ● **Berylliosis**
- ○ **Asthma**

Description

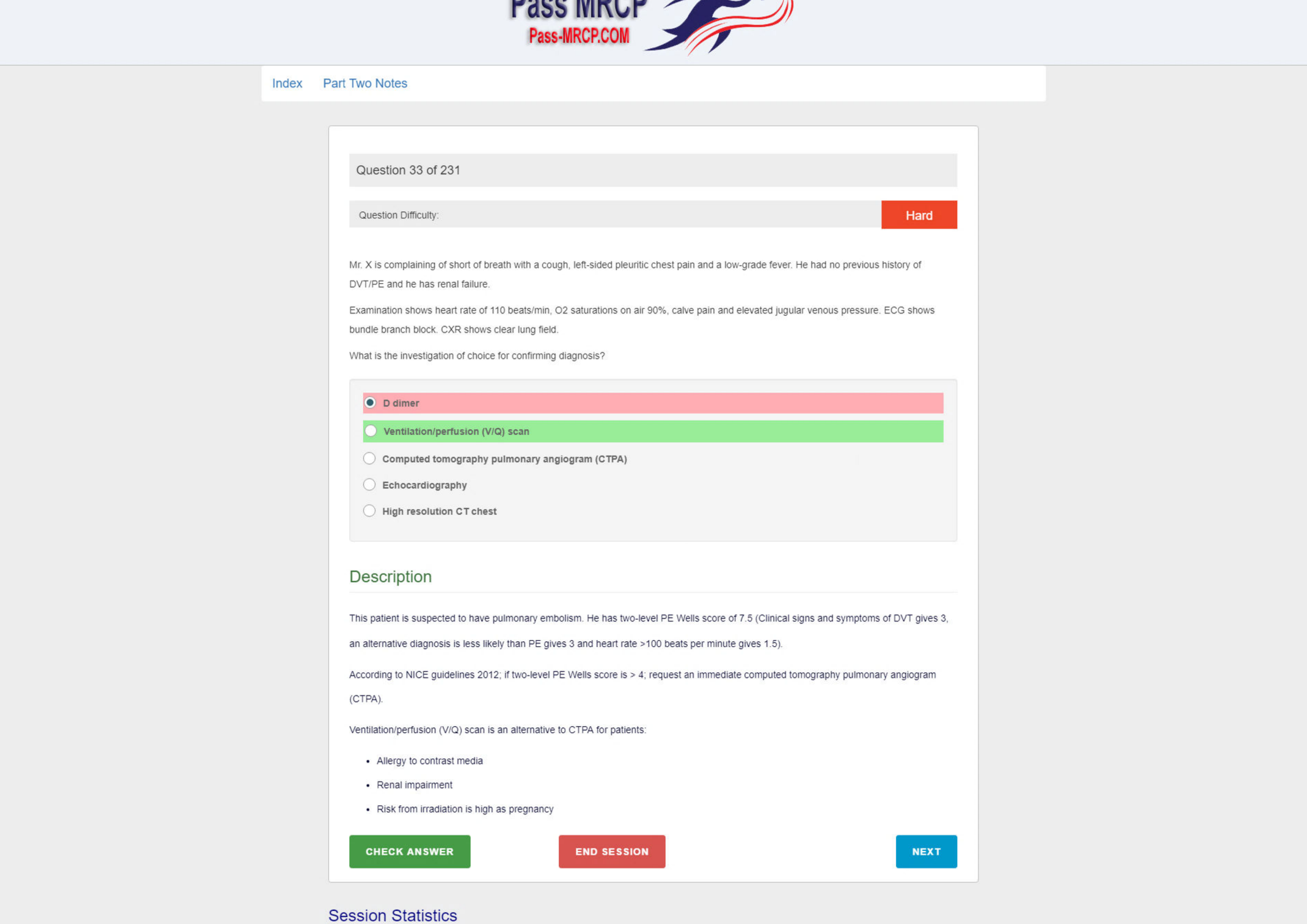
Berylliosis is a chronic allergic-type lung response caused by exposure to beryllium and its compounds, a form of beryllium poisoning.

It is most classically associated with nuclear reactors, semi-conductor, electronics industries or manufacturing of fluorescent light bulbs.

It is associated with an acute chemical pneumonitis and a granulomatous lung disease.

Session Statistics

Answered: 31
✓ **Correct**: 7
✕ **Incorrect**: 24
Average Score: 22.58 %



Question 33 of 231

Question Difficulty: **Hard**

Mr. X is complaining of short of breath with a cough, left-sided pleuritic chest pain and a low-grade fever. He had no previous history of DVT/PE and he has renal failure.

Examination shows heart rate of 110 beats/min, O2 saturations on air 90%, calve pain and elevated jugular venous pressure. ECG shows bundle branch block. CXR shows clear lung field.

What is the investigation of choice for confirming diagnosis?

● **D dimer**
○ **Ventilation/perfusion (V/Q) scan**
○ **Computed tomography pulmonary angiogram (CTPA)**
○ **Echocardiography**
○ **High resolution CT chest**

Description

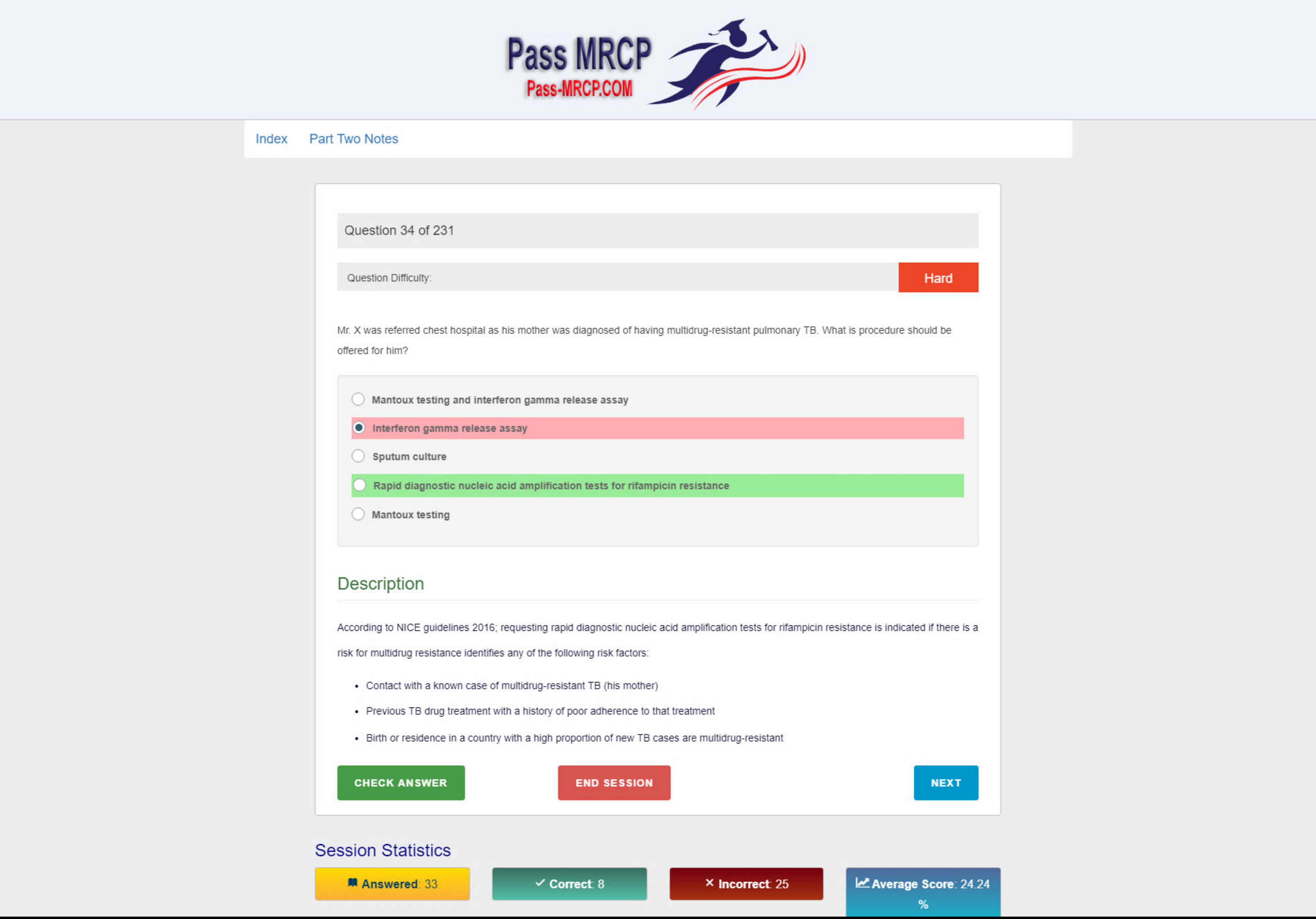
This patient is suspected to have pulmonary embolism. He has two-level PE Wells score of 7.5 (Clinical signs and symptoms of DVT gives 3, an alternative diagnosis is less likely than PE gives 3 and heart rate >100 beats per minute gives 1.5).

According to NICE guidelines 2012; if two-level PE Wells score is > 4; request an immediate computed tomography pulmonary angiogram (CTPA).

Ventilation/perfusion (V/Q) scan is an alternative to CTPA for patients:

- Allergy to contrast media
- Renal impairment
- Risk from irradiation is high as pregnancy

Session Statistics



Question 34 of 231

Question Difficulty: Hard

Mr. X was referred chest hospital as his mother was diagnosed of having multidrug-resistant pulmonary TB. What is procedure should be offered for him?

○ **Mantoux testing and interferon gamma release assay**
● **Interferon gamma release assay**
○ **Sputum culture**
○ **Rapid diagnostic nucleic acid amplification tests for rifampicin resistance**
○ **Mantoux testing**

Description

According to NICE guidelines 2016; requesting rapid diagnostic nucleic acid amplification tests for rifampicin resistance is indicated if there is a risk for multidrug resistance identifies any of the following risk factors:

- Contact with a known case of multidrug-resistant TB (his mother)
- Previous TB drug treatment with a history of poor adherence to that treatment
- Birth or residence in a country with a high proportion of new TB cases are multidrug-resistant

Session Statistics

Answered: 33
✓ **Correct**: 8
✕ **Incorrect**: 25
Average Score: 24.24 %

Question 35 of 231

Question Difficulty: **Hard**

25 years Mr. X was complaining of fever, malaise and worsening cough for 2 days.

Examination shows he is pyrexial 38 C, and his blood pressure is 110/70 mmHg, with a pulse of 105/min. there is a mild pharyngitis and auscultation of the chest reveals scattered crackles and wheeze.

CXR Shows extensive bilateral consolidation. Investigations show:

Hemoglobin	9 g/dL	(Male: 13.5-17.5 g/dL)
Reticulocytes	6%	(0.5-2.4 %)
Leukocyte count	12 x10^{9} /L	(4.0-11.0 x 10^{9} /L)
Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)
Serum creatine kinase	155 U/L	(25-90 U/L)

What is the management of choice?

Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)
Serum creatine kinase	155 U/L	(25-90 U/L)

What is the management of choice?

○ **Ampicillin**

○ **Clindamycin**

● **Vancomycin**

○ **Erythromycin**

○ **Imipenem**

Description

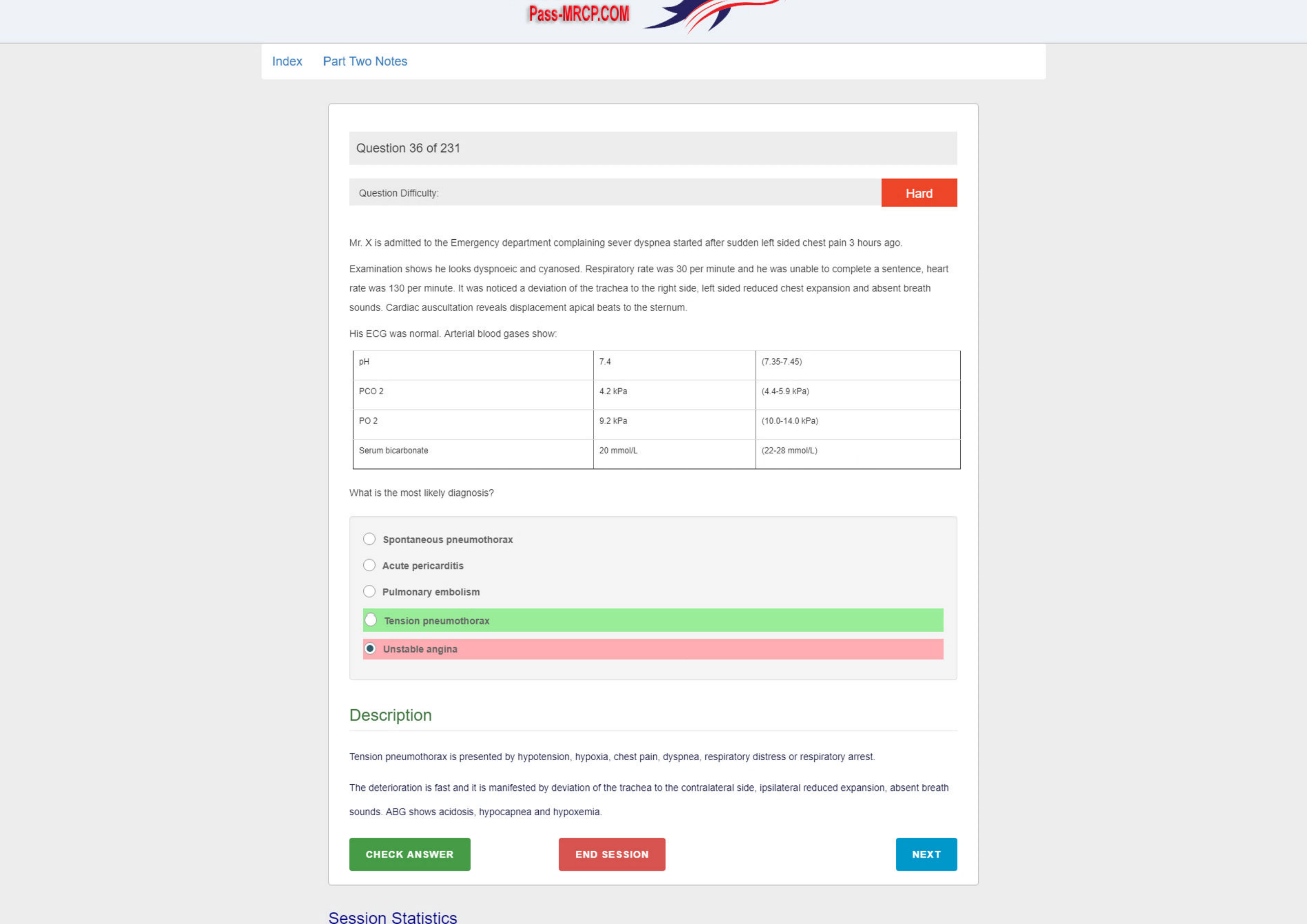
This patient has a typical pneumonia associated with mild hepatitis, renal failure and autoimmune hemolytic anemia due to reticulocytosis which are features of Mycoplasma pneumoniae infection.

Macrolides are first line management, tetracycline and fluoroquinolones are alternatives.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 34 ✓ **Correct**: 8 ✕ **Incorrect**: 26 **Average Score**: 23.53 %



Question 36 of 231

Question Difficulty: Hard

Mr. X is admitted to the Emergency department complaining sever dyspnea started after sudden left sided chest pain 3 hours ago.

Examination shows he looks dyspnoeic and cyanosed. Respiratory rate was 30 per minute and he was unable to complete a sentence, heart rate was 130 per minute. It was noticed a deviation of the trachea to the right side, left sided reduced chest expansion and absent breath sounds. Cardiac auscultation reveals displacement apical beats to the sternum.

His ECG was normal. Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	4.2 kPa	(4.4-5.9 kPa)
PO 2	9.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	20 mmol/L	(22-28 mmol/L)

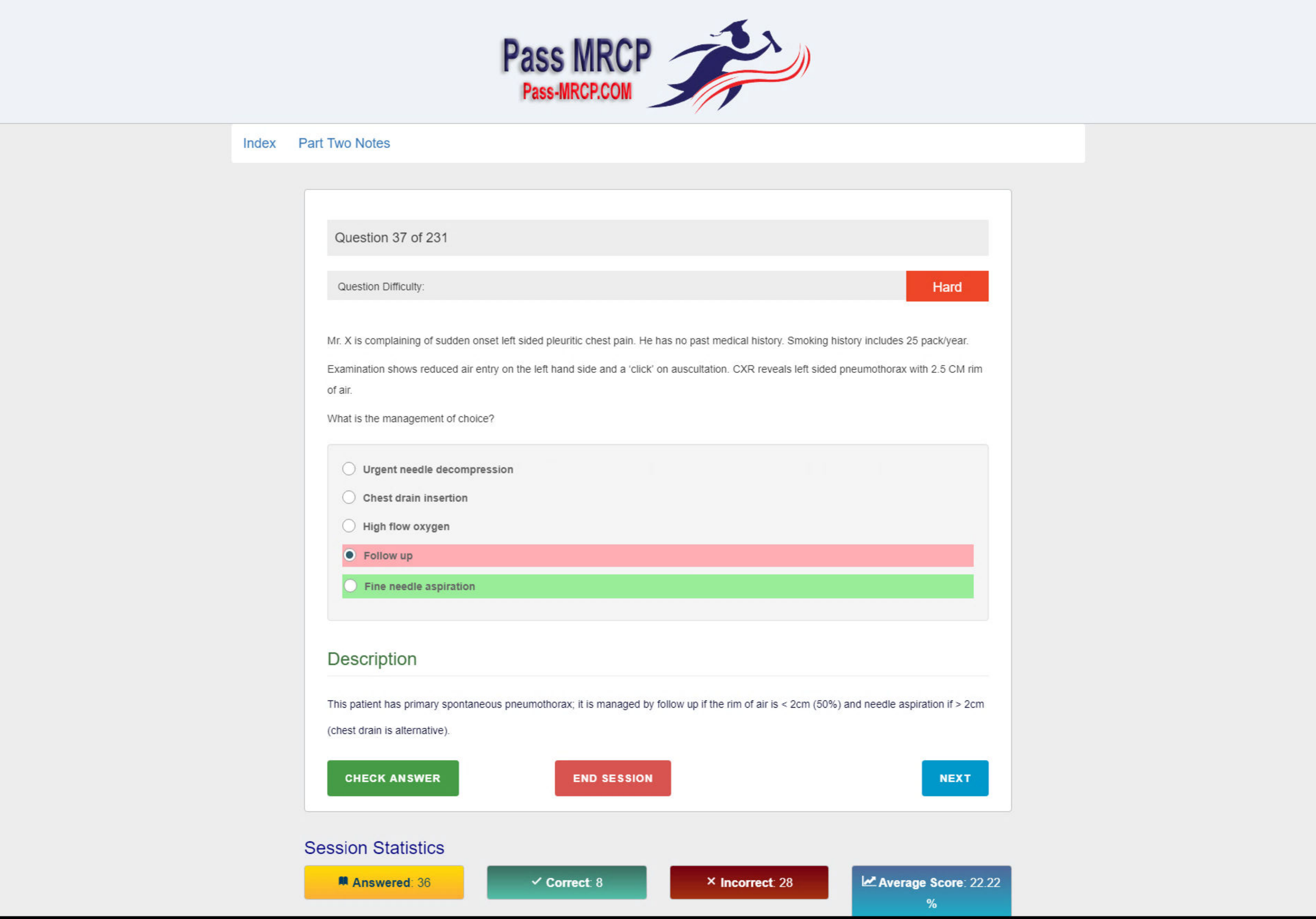
What is the most likely diagnosis?

- ○ **Spontaneous pneumothorax**
- ○ **Acute pericarditis**
- ○ **Pulmonary embolism**
- ○ **Tension pneumothorax**
- ● **Unstable angina**

Description

Tension pneumothorax is presented by hypotension, hypoxia, chest pain, dyspnea, respiratory distress or respiratory arrest.

The deterioration is fast and it is manifested by deviation of the trachea to the contralateral side, ipsilateral reduced expansion, absent breath sounds. ABG shows acidosis, hypocapnea and hypoxemia.



Question 37 of 231

Question Difficulty: Hard

Mr. X is complaining of sudden onset left sided pleuritic chest pain. He has no past medical history. Smoking history includes 25 pack/year.

Examination shows reduced air entry on the left hand side and a 'click' on auscultation. CXR reveals left sided pneumothorax with 2.5 CM rim of air.

What is the management of choice?

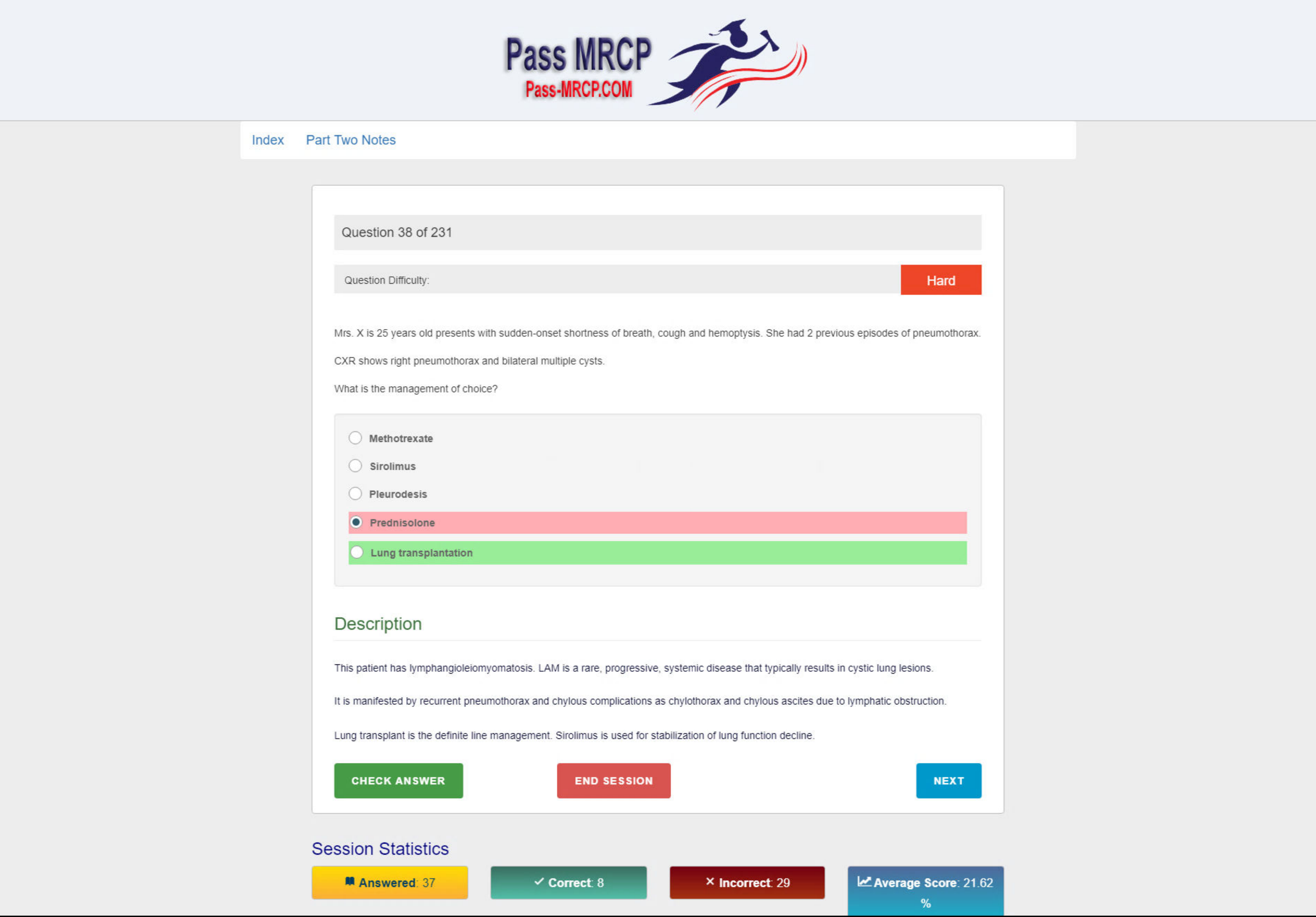
- ○ Urgent needle decompression
- ○ Chest drain insertion
- ○ High flow oxygen
- ● Follow up
- ○ Fine needle aspiration

Description

This patient has primary spontaneous pneumothorax; it is managed by follow up if the rim of air is < 2cm (50%) and needle aspiration if > 2cm (chest drain is alternative).

Session Statistics

Answered: 36
✓ **Correct**: 8
✕ **Incorrect**: 28
Average Score: 22.22 %



Question 38 of 231

Question Difficulty: Hard

Mrs. X is 25 years old presents with sudden-onset shortness of breath, cough and hemoptysis. She had 2 previous episodes of pneumothorax.

CXR shows right pneumothorax and bilateral multiple cysts.

What is the management of choice?

- ○ **Methotrexate**
- ○ **Sirolimus**
- ○ **Pleurodesis**
- ● **Prednisolone**
- ○ **Lung transplantation**

Description

This patient has lymphangioleiomyomatosis. LAM is a rare, progressive, systemic disease that typically results in cystic lung lesions.

It is manifested by recurrent pneumothorax and chylous complications as chylothorax and chylous ascites due to lymphatic obstruction.

Lung transplant is the definite line management. Sirolimus is used for stabilization of lung function decline.

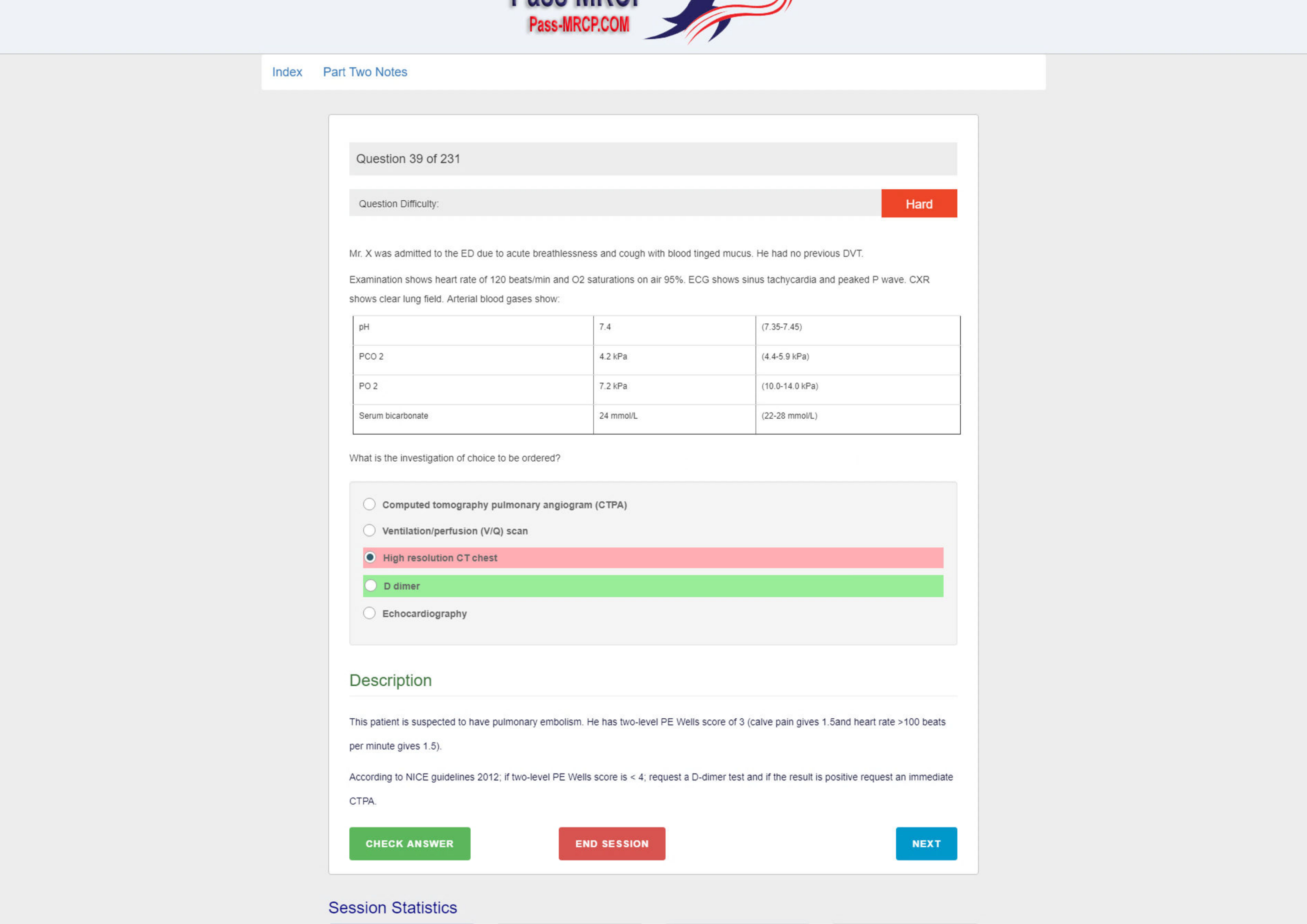
Session Statistics

Answered: 37

Correct: 8

Incorrect: 29

Average Score: 21.62 %



Question 39 of 231

Question Difficulty:

Mr. X was admitted to the ED due to acute breathlessness and cough with blood tinged mucus. He had no previous DVT.

Examination shows heart rate of 120 beats/min and O2 saturations on air 95%. ECG shows sinus tachycardia and peaked P wave. CXR shows clear lung field. Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	4.2 kPa	(4.4-5.9 kPa)
PO 2	7.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

What is the investigation of choice to be ordered?

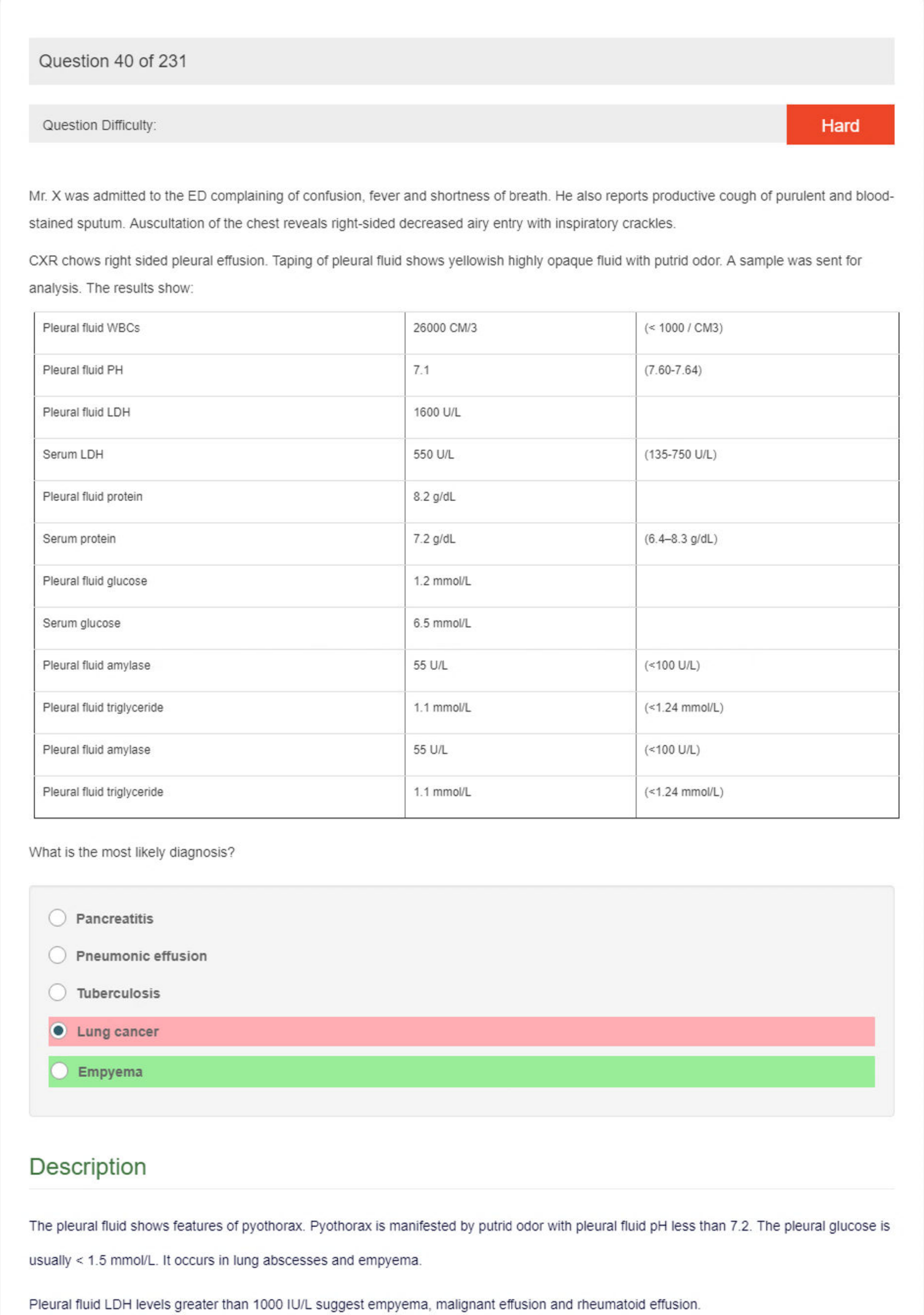
- ○ **Computed tomography pulmonary angiogram (CTPA)**
- ○ **Ventilation/perfusion (V/Q) scan**
- ● **High resolution CT chest**
- ○ **D dimer**
- ○ **Echocardiography**

Description

This patient is suspected to have pulmonary embolism. He has two-level PE Wells score of 3 (calve pain gives 1.5and heart rate >100 beats per minute gives 1.5).

According to NICE guidelines 2012; if two-level PE Wells score is < 4; request a D-dimer test and if the result is positive request an immediate CTPA.

Session Statistics



Question 40 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED complaining of confusion, fever and shortness of breath. He also reports productive cough of purulent and blood-stained sputum. Auscultation of the chest reveals right-sided decreased airy entry with inspiratory crackles.

CXR chows right sided pleural effusion. Taping of pleural fluid shows yellowish highly opaque fluid with putrid odor. A sample was sent for analysis. The results show:

Pleural fluid WBCs	26000 CM/3	(< 1000 / CM3)
Pleural fluid PH	7.1	(7.60-7.64)
Pleural fluid LDH	1600 U/L	
Serum LDH	550 U/L	(135-750 U/L)
Pleural fluid protein	8.2 g/dL	
Serum protein	7.2 g/dL	(6.4–8.3 g/dL)
Pleural fluid glucose	1.2 mmol/L	
Serum glucose	6.5 mmol/L	
Pleural fluid amylase	55 U/L	(<100 U/L)
Pleural fluid triglyceride	1.1 mmol/L	(<1.24 mmol/L)
Pleural fluid amylase	55 U/L	(<100 U/L)
Pleural fluid triglyceride	1.1 mmol/L	(<1.24 mmol/L)

What is the most likely diagnosis?

- ○ **Pancreatitis**
- ○ **Pneumonic effusion**
- ○ **Tuberculosis**
- ● **Lung cancer**
- ○ **Empyema**

Description

The pleural fluid shows features of pyothorax. Pyothorax is manifested by putrid odor with pleural fluid pH less than 7.2. The pleural glucose is usually < 1.5 mmol/L. It occurs in lung abscesses and empyema.

Pleural fluid LDH levels greater than 1000 IU/L suggest empyema, malignant effusion and rheumatoid effusion.

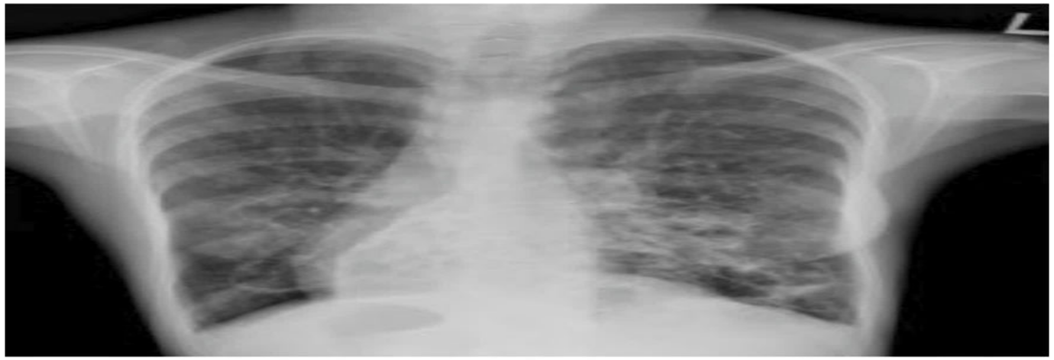
Question 41 of 231

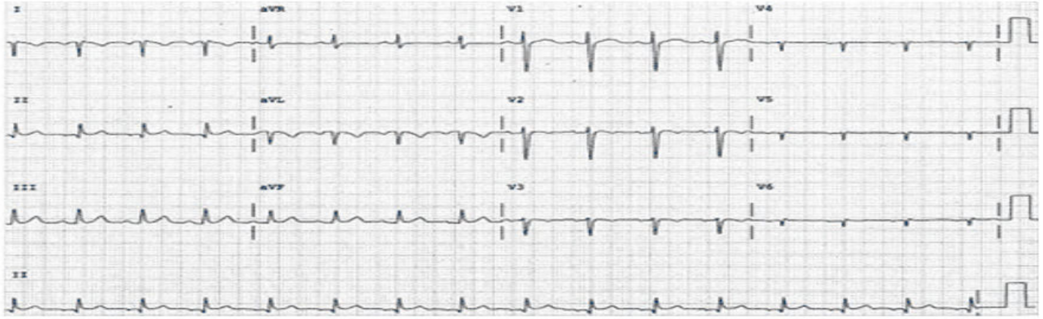
Question Difficulty: **Hard**

12-year-old boy is complaining of a dry and hacking chronic cough and shortness of breath on exertion and he has no longer able to do any sporting activities.

Examination shows he is afebrile and slightly dyspnoeic. Chest auscultation reveals generalized wheeze associated with coarse inspiratory crackles.

CXR and ECG are shown in the images.



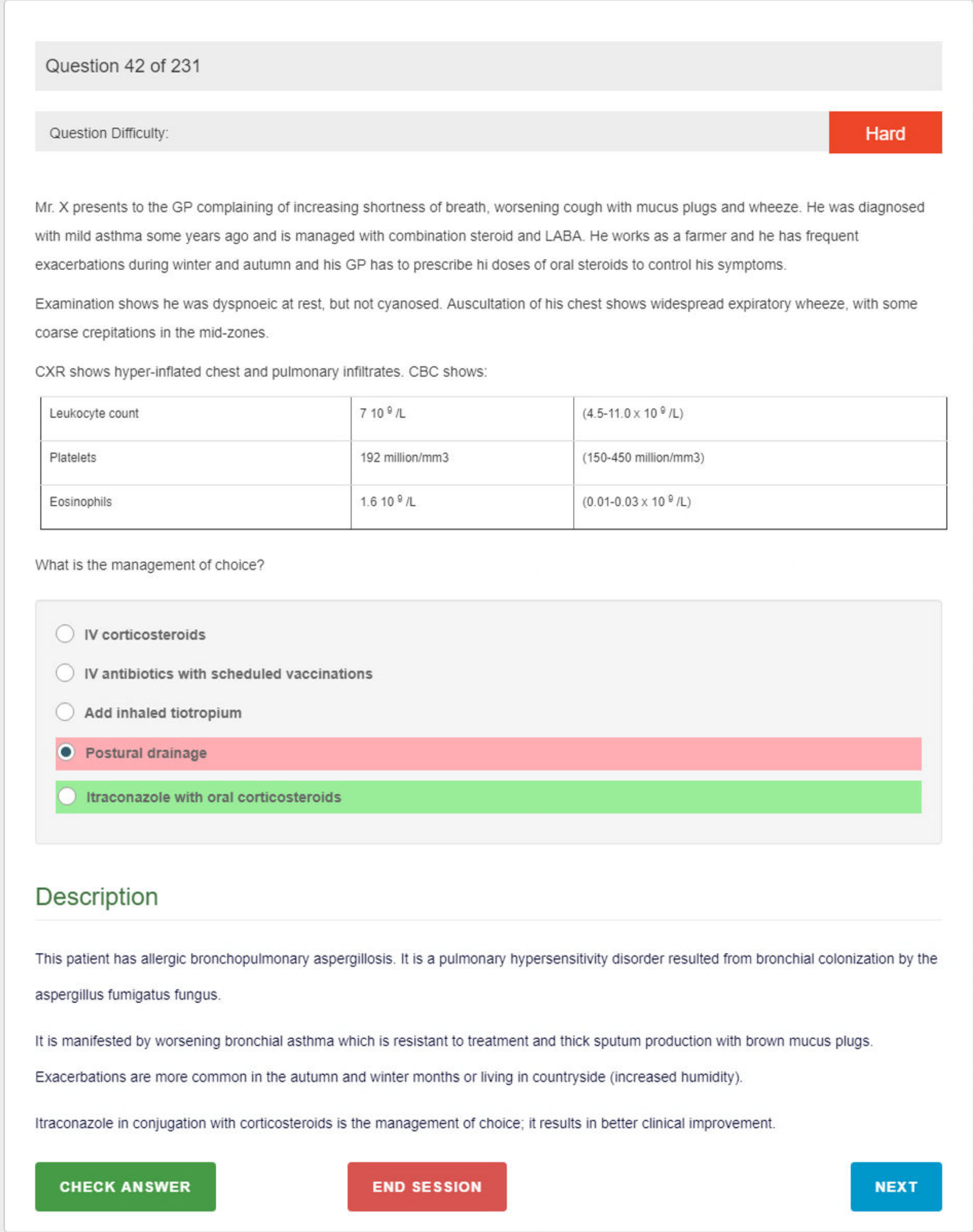


What is the most likely diagnosis?

- ○ **Yellow nail syndrome**
- ○ **Chronic bronchitis**
- ● **Kartagener syndrome**
- ○ **Cystic fibrosis**
- ○ **Primary ciliary dyskinesia**

Description

The CXR shows dextrocardia, bronchiectasis and situs inversus (right sided liver). The ECG shows features of dextrocardia (Positive QRS



Question 42 of 231

Question Difficulty: **Hard**

Mr. X presents to the GP complaining of increasing shortness of breath, worsening cough with mucus plugs and wheeze. He was diagnosed with mild asthma some years ago and is managed with combination steroid and LABA. He works as a farmer and he has frequent exacerbations during winter and autumn and his GP has to prescribe hi doses of oral steroids to control his symptoms.

Examination shows he was dyspnoeic at rest, but not cyanosed. Auscultation of his chest shows widespread expiratory wheeze, with some coarse crepitations in the mid-zones.

CXR shows hyper-inflated chest and pulmonary infiltrates. CBC shows:

Leukocyte count	7 10^9 /L	(4.5-11.0 x 10^9 /L)
Platelets	192 million/mm3	(150-450 million/mm3)
Eosinophils	1.6 10^9 /L	(0.01-0.03 x 10^9 /L)

What is the management of choice?

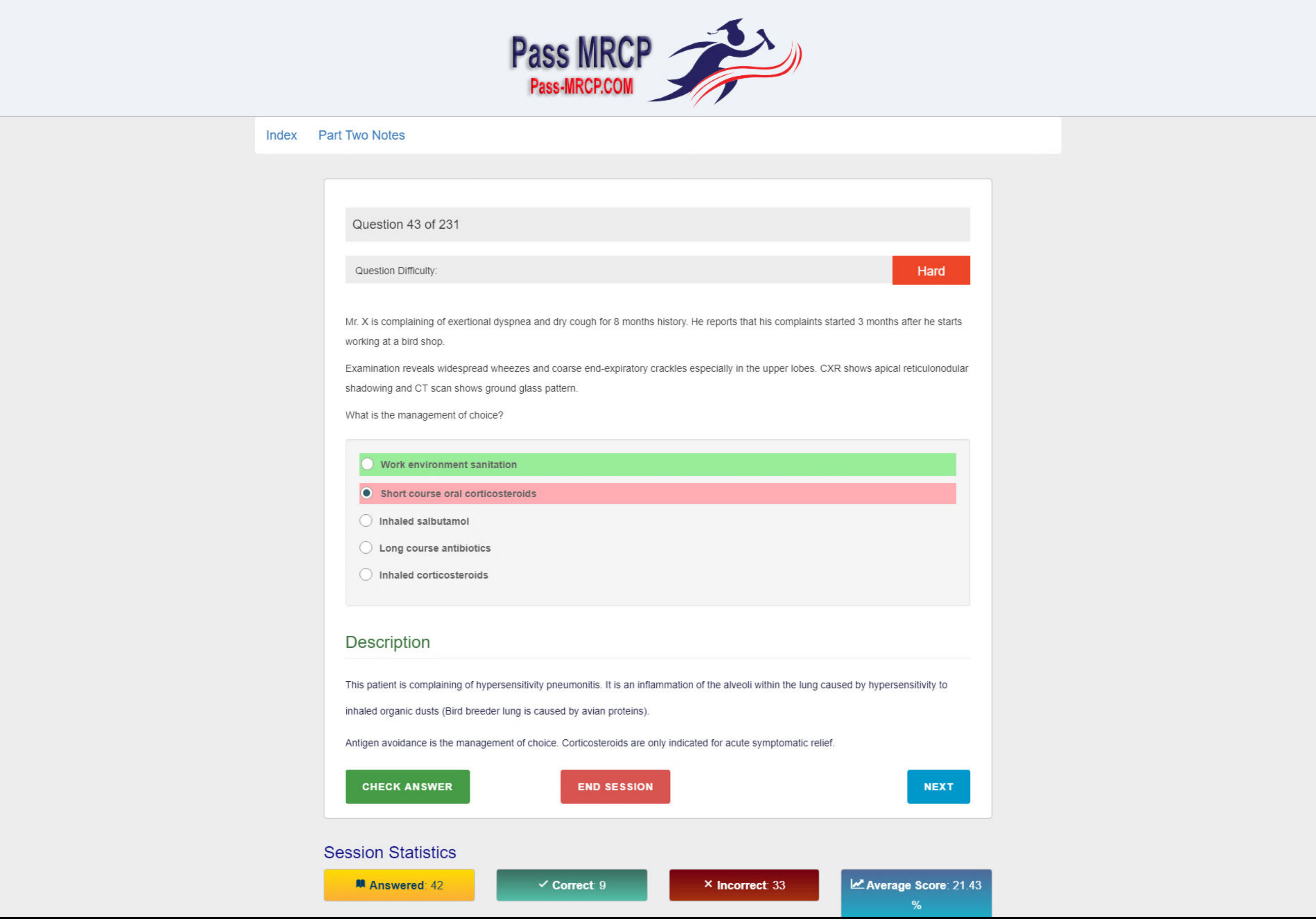
- ○ **IV corticosteroids**
- ○ **IV antibiotics with scheduled vaccinations**
- ○ **Add inhaled tiotropium**
- ● **Postural drainage**
- ○ **Itraconazole with oral corticosteroids**

Description

This patient has allergic bronchopulmonary aspergillosis. It is a pulmonary hypersensitivity disorder resulted from bronchial colonization by the aspergillus fumigatus fungus.

It is manifested by worsening bronchial asthma which is resistant to treatment and thick sputum production with brown mucus plugs. Exacerbations are more common in the autumn and winter months or living in countryside (increased humidity).

Itraconazole in conjugation with corticosteroids is the management of choice; it results in better clinical improvement.



Question 43 of 231

Question Difficulty: Hard

Mr. X is complaining of exertional dyspnea and dry cough for 8 months history. He reports that his complaints started 3 months after he starts working at a bird shop.

Examination reveals widespread wheezes and coarse end-expiratory crackles especially in the upper lobes. CXR shows apical reticulonodular shadowing and CT scan shows ground glass pattern.

What is the management of choice?

- ○ **Work environment sanitation**
- ● **Short course oral corticosteroids**
- ○ **Inhaled salbutamol**
- ○ **Long course antibiotics**
- ○ **Inhaled corticosteroids**

Description

This patient is complaining of hypersensitivity pneumonitis. It is an inflammation of the alveoli within the lung caused by hypersensitivity to inhaled organic dusts (Bird breeder lung is caused by avian proteins).

Antigen avoidance is the management of choice. Corticosteroids are only indicated for acute symptomatic relief.

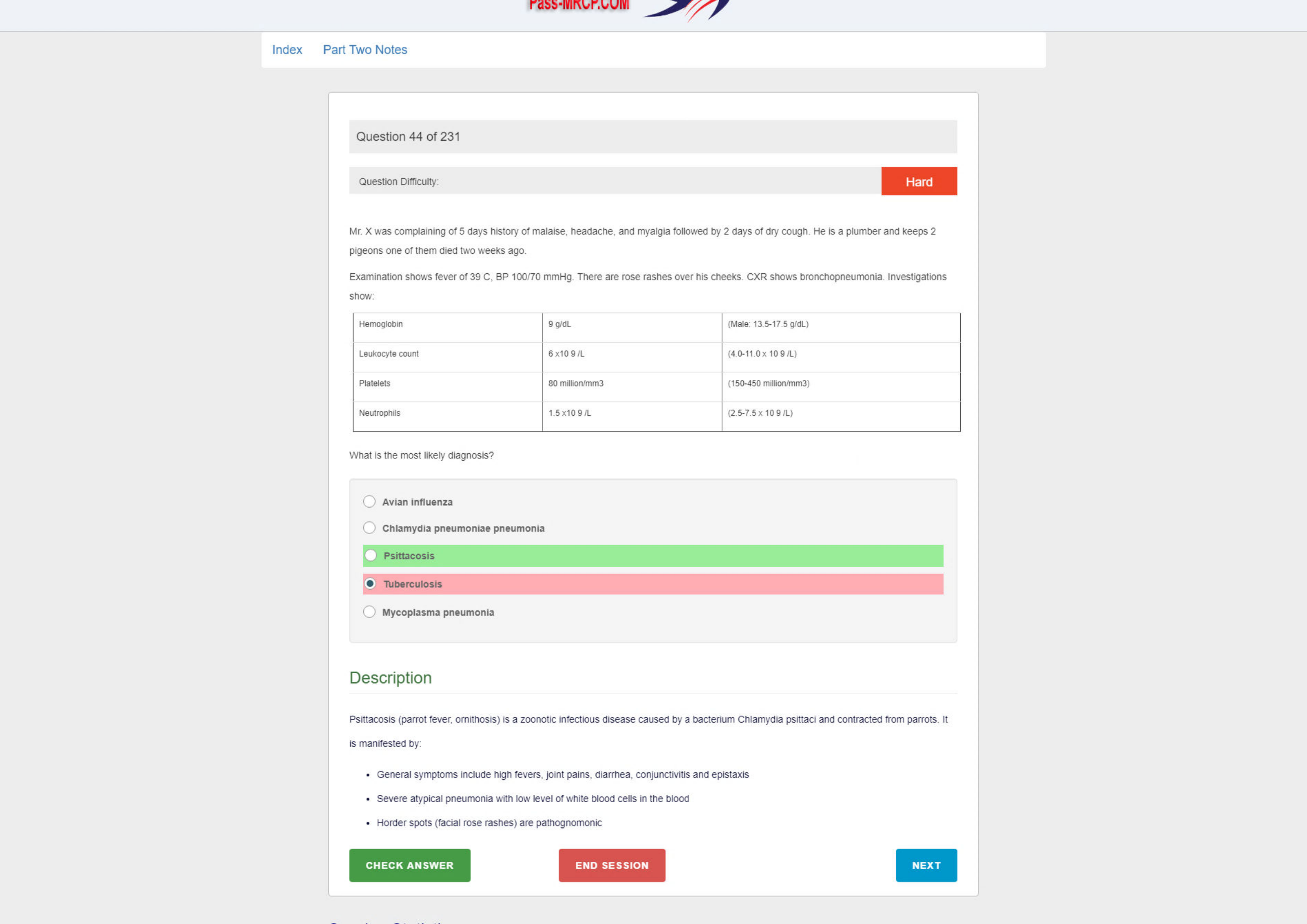
Session Statistics

Answered: 42

✓ **Correct**: 9

✕ **Incorrect**: 33

Average Score: 21.43 %



Question 44 of 231

Question Difficulty: **Hard**

Mr. X was complaining of 5 days history of malaise, headache, and myalgia followed by 2 days of dry cough. He is a plumber and keeps 2 pigeons one of them died two weeks ago.

Examination shows fever of 39 C, BP 100/70 mmHg. There are rose rashes over his cheeks. CXR shows bronchopneumonia. Investigations show:

Hemoglobin	9 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	6 x10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	80 million/mm3	(150-450 million/mm3)
Neutrophils	1.5 x10 9 /L	(2.5-7.5 x 10 9 /L)

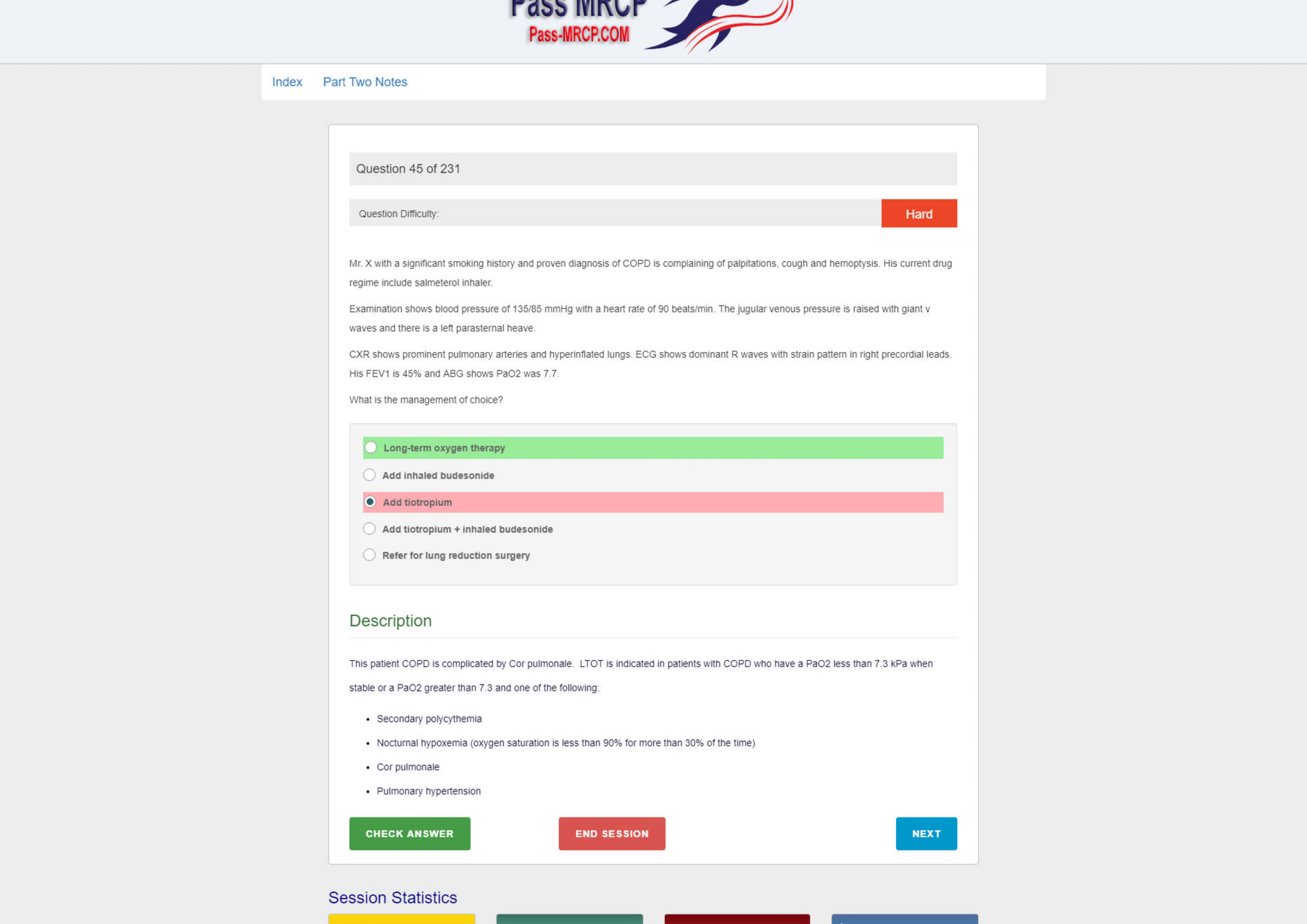
What is the most likely diagnosis?

- ○ **Avian influenza**
- ○ **Chlamydia pneumoniae pneumonia**
- ○ **Psittacosis**
- ● **Tuberculosis**
- ○ **Mycoplasma pneumonia**

Description

Psittacosis (parrot fever, ornithosis) is a zoonotic infectious disease caused by a bacterium Chlamydia psittaci and contracted from parrots. It is manifested by:

- General symptoms include high fevers, joint pains, diarrhea, conjunctivitis and epistaxis
- Severe atypical pneumonia with low level of white blood cells in the blood
- Horder spots (facial rose rashes) are pathognomonic



Question 45 of 231

Question Difficulty: Hard

Mr. X with a significant smoking history and proven diagnosis of COPD is complaining of palpitations, cough and hemoptysis. His current drug regime include salmeterol inhaler.

Examination shows blood pressure of 135/85 mmHg with a heart rate of 90 beats/min. The jugular venous pressure is raised with giant v waves and there is a left parasternal heave.

CXR shows prominent pulmonary arteries and hyperinflated lungs. ECG shows dominant R waves with strain pattern in right precordial leads. His FEV1 is 45% and ABG shows PaO2 was 7.7.

What is the management of choice?

○ **Long-term oxygen therapy**

○ **Add inhaled budesonide**

● **Add tiotropium**

○ **Add tiotropium + inhaled budesonide**

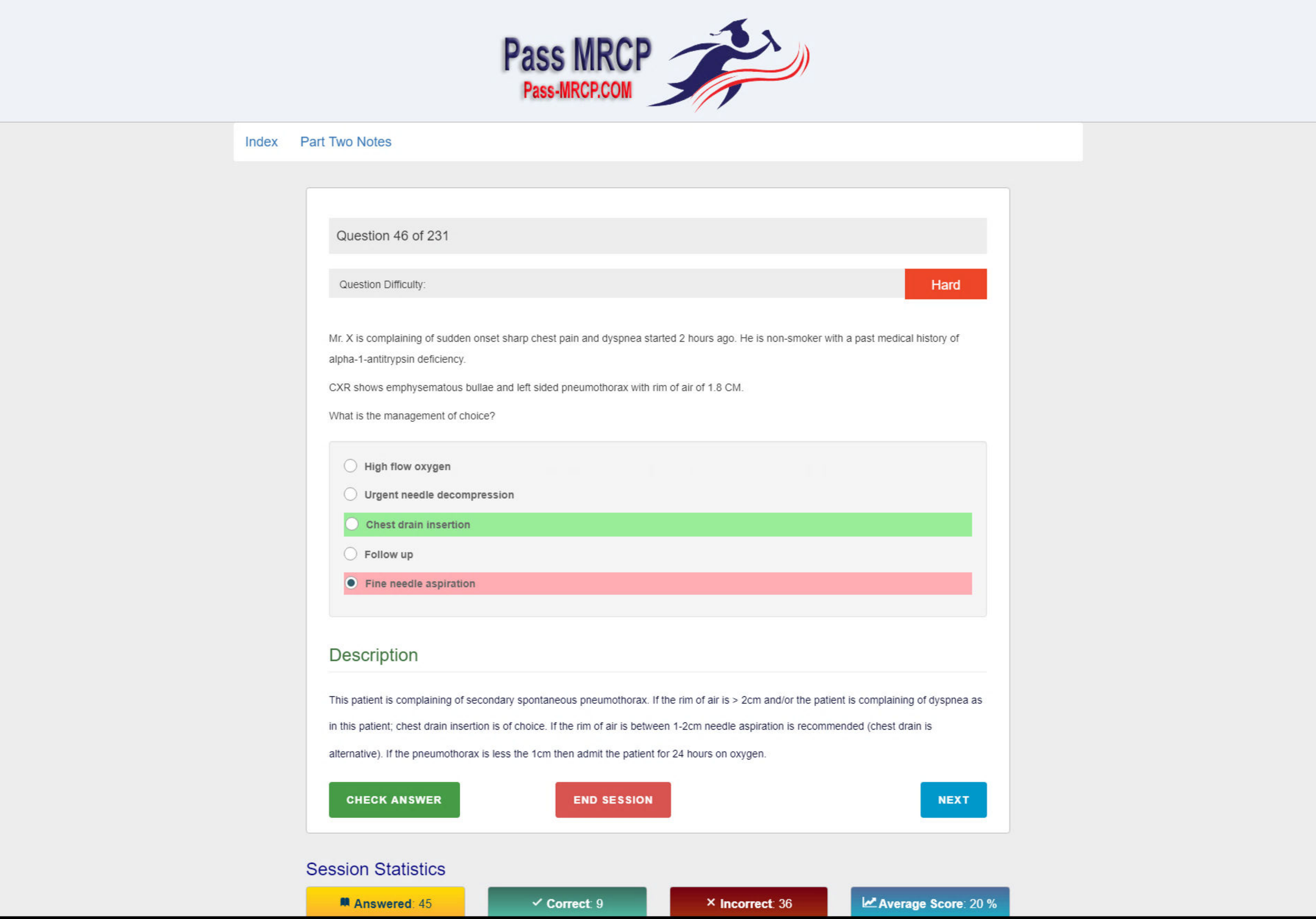
○ **Refer for lung reduction surgery**

Description

This patient COPD is complicated by Cor pulmonale. LTOT is indicated in patients with COPD who have a PaO2 less than 7.3 kPa when stable or a PaO2 greater than 7.3 and one of the following:

- Secondary polycythemia
- Nocturnal hypoxemia (oxygen saturation is less than 90% for more than 30% of the time)
- Cor pulmonale
- Pulmonary hypertension

Session Statistics



Question 46 of 231

Question Difficulty: **Hard**

Mr. X is complaining of sudden onset sharp chest pain and dyspnea started 2 hours ago. He is non-smoker with a past medical history of alpha-1-antitrypsin deficiency.

CXR shows emphysematous bullae and left sided pneumothorax with rim of air of 1.8 CM.

What is the management of choice?

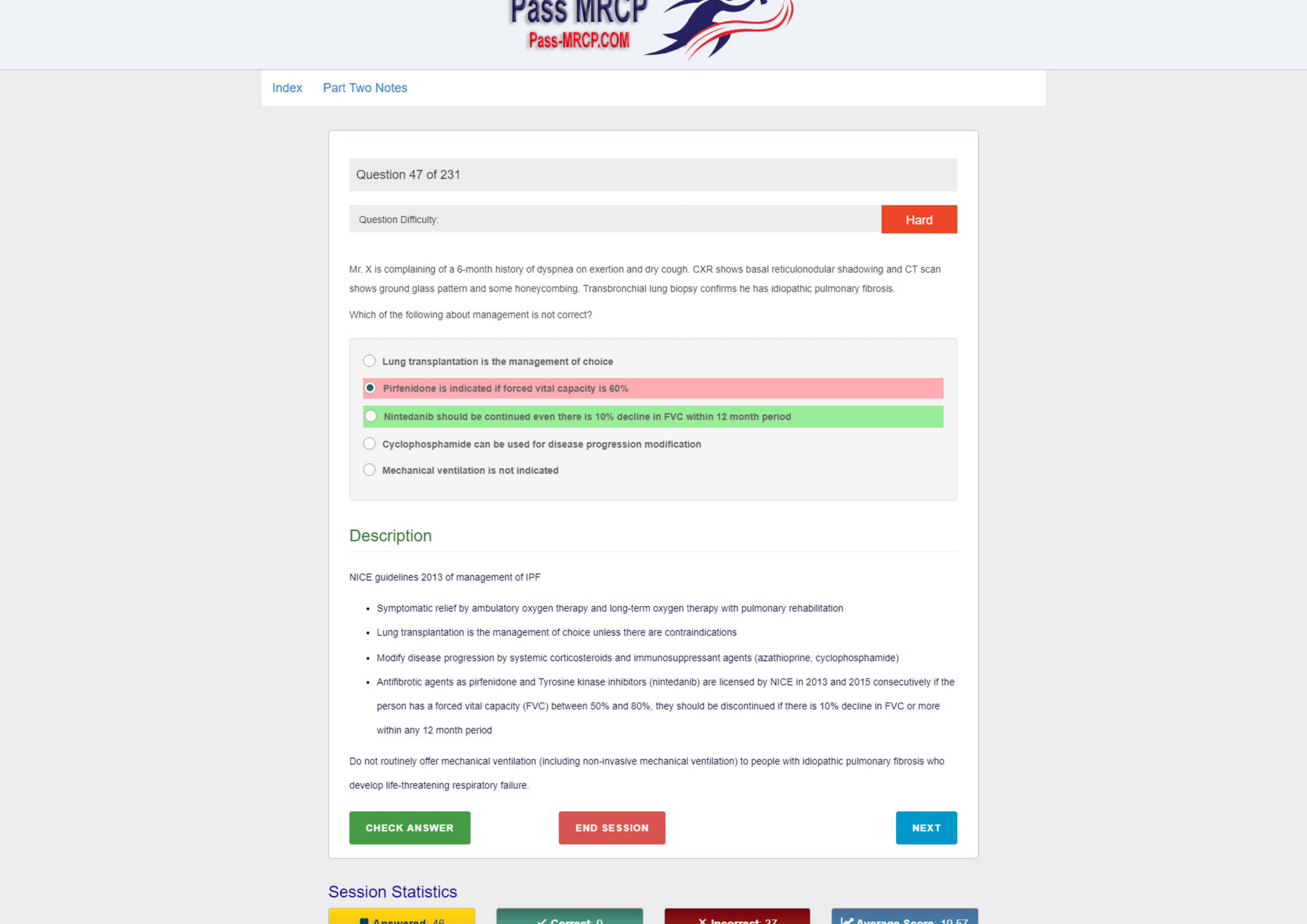
- ○ **High flow oxygen**
- ○ **Urgent needle decompression**
- ○ **Chest drain insertion**
- ○ **Follow up**
- ● **Fine needle aspiration**

Description

This patient is complaining of secondary spontaneous pneumothorax. If the rim of air is > 2cm and/or the patient is complaining of dyspnea as in this patient; chest drain insertion is of choice. If the rim of air is between 1-2cm needle aspiration is recommended (chest drain is alternative). If the pneumothorax is less the 1cm then admit the patient for 24 hours on oxygen.

Session Statistics

Answered: 45
✓ **Correct**: 9
✕ **Incorrect**: 36
Average Score: 20 %



Question 47 of 231

Question Difficulty: Hard

Mr. X is complaining of a 6-month history of dyspnea on exertion and dry cough. CXR shows basal reticulonodular shadowing and CT scan shows ground glass pattern and some honeycombing. Transbronchial lung biopsy confirms he has idiopathic pulmonary fibrosis.

Which of the following about management is not correct?

- ○ **Lung transplantation is the management of choice**
- ● **Pirfenidone is indicated if forced vital capacity is 60%**
- ○ **Nintedanib should be continued even there is 10% decline in FVC within 12 month period**
- ○ **Cyclophosphamide can be used for disease progression modification**
- ○ **Mechanical ventilation is not indicated**

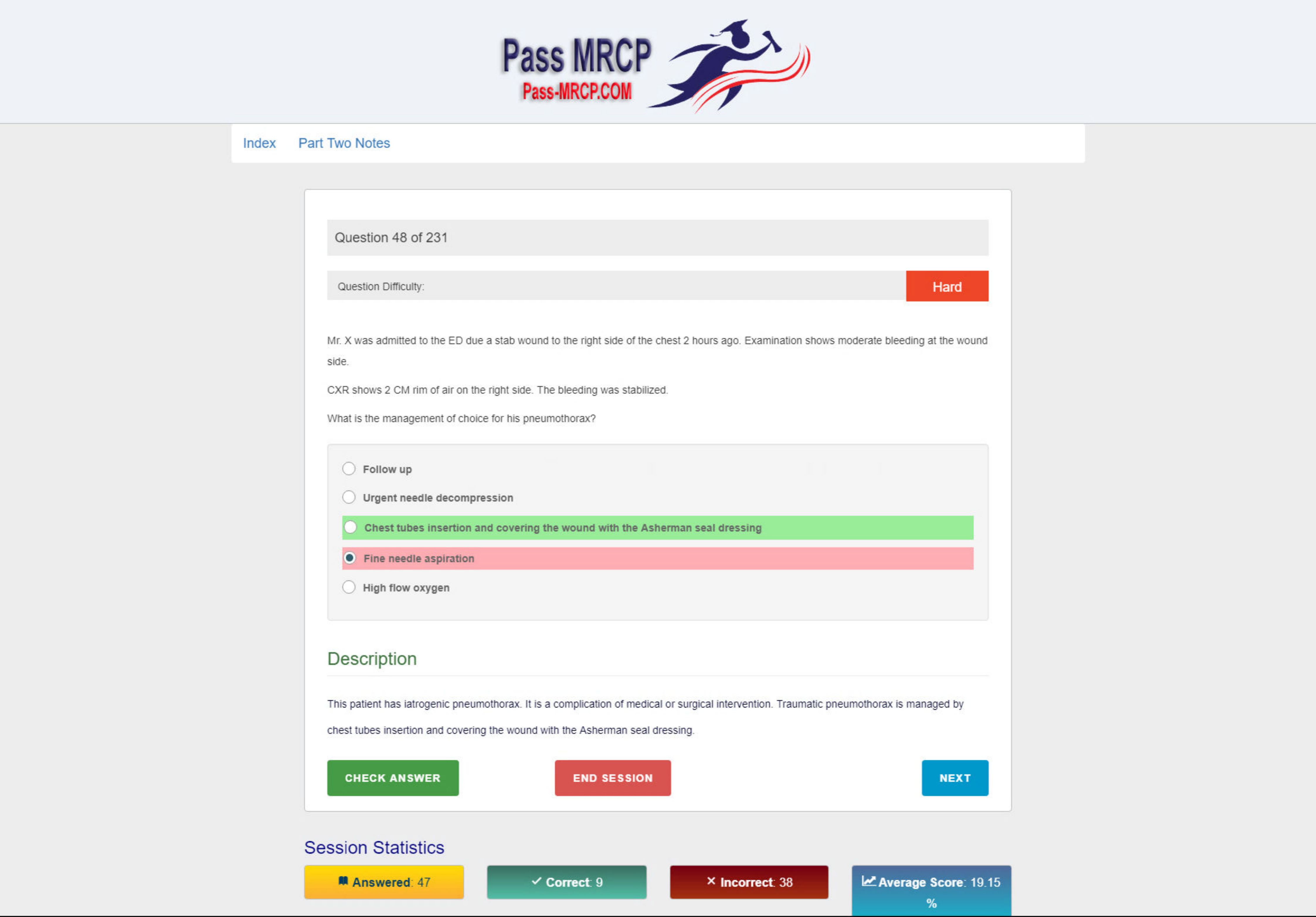
Description

NICE guidelines 2013 of management of IPF

- Symptomatic relief by ambulatory oxygen therapy and long-term oxygen therapy with pulmonary rehabilitation
- Lung transplantation is the management of choice unless there are contraindications
- Modify disease progression by systemic corticosteroids and immunosuppressant agents (azathioprine, cyclophosphamide)
- Antifibrotic agents as pirfenidone and Tyrosine kinase inhibitors (nintedanib) are licensed by NICE in 2013 and 2015 consecutively if the person has a forced vital capacity (FVC) between 50% and 80%, they should be discontinued if there is 10% decline in FVC or more within any 12 month period

Do not routinely offer mechanical ventilation (including non-invasive mechanical ventilation) to people with idiopathic pulmonary fibrosis who develop life-threatening respiratory failure.

Session Statistics



Question 48 of 231

Question Difficulty: Hard

Mr. X was admitted to the ED due a stab wound to the right side of the chest 2 hours ago. Examination shows moderate bleeding at the wound side.

CXR shows 2 CM rim of air on the right side. The bleeding was stabilized.

What is the management of choice for his pneumothorax?

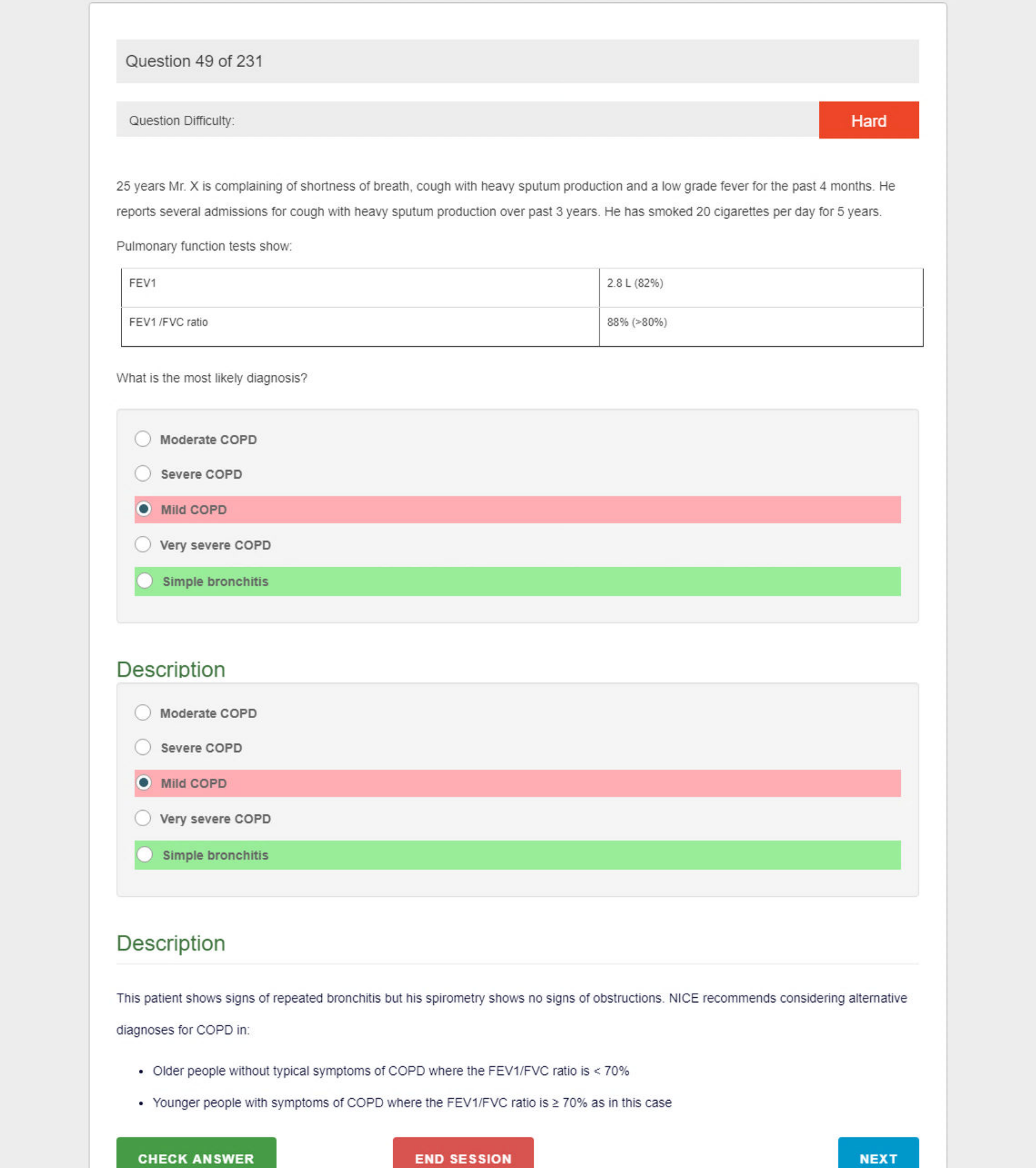
- ○ **Follow up**
- ○ **Urgent needle decompression**
- ○ **Chest tubes insertion and covering the wound with the Asherman seal dressing**
- ● **Fine needle aspiration**
- ○ **High flow oxygen**

Description

This patient has iatrogenic pneumothorax. It is a complication of medical or surgical intervention. Traumatic pneumothorax is managed by chest tubes insertion and covering the wound with the Asherman seal dressing.

Session Statistics

Answered: 47
✓ **Correct**: 9
✕ **Incorrect**: 38
Average Score: 19.15 %



Question 49 of 231

Question Difficulty: **Hard**

25 years Mr. X is complaining of shortness of breath, cough with heavy sputum production and a low grade fever for the past 4 months. He reports several admissions for cough with heavy sputum production over past 3 years. He has smoked 20 cigarettes per day for 5 years.

Pulmonary function tests show:

FEV1	2.8 L (82%)
FEV1 /FVC ratio	88% (>80%)

What is the most likely diagnosis?

○ **Moderate COPD**
○ **Severe COPD**
● **Mild COPD**
○ **Very severe COPD**
○ **Simple bronchitis**

Description

○ **Moderate COPD**
○ **Severe COPD**
● **Mild COPD**
○ **Very severe COPD**
○ **Simple bronchitis**

Description

This patient shows signs of repeated bronchitis but his spirometry shows no signs of obstructions. NICE recommends considering alternative diagnoses for COPD in:

- Older people without typical symptoms of COPD where the FEV1/FVC ratio is < 70%
- Younger people with symptoms of COPD where the FEV1/FVC ratio is ≥ 70% as in this case

Question 50 of 231

Question Difficulty: **Hard**

45 years Mr. X was complaining of productive cough, fever accompanied by shaking chills and dyspnea for 3 days. Examination shows he is alert with temp of 40 C and BP of 110/70 mmhg. His O2 saturation was 88 on room air.

His CXR shows lobar pneumonia. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 x10^{9}/L	(4.0-11.0 x 10^{9}/L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10^{9}/L	(2.5-7.5 x 10^{9}/L)
Lymphocytes	2 x10^{9}/L	(1.5-3.5 x 10^{9}/L)
Eosinophils	0.3 x10^{9}/L	(0.04-0.4 x 10^{9}/L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	8.6 mmol/L	(2.5-7.1 mmol/L)

What is the mortality rate associated with his condition?

- ○ 10%
- ○ 7%
- ○ 15%
- ● 2%
- ○ 5%

Description

NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

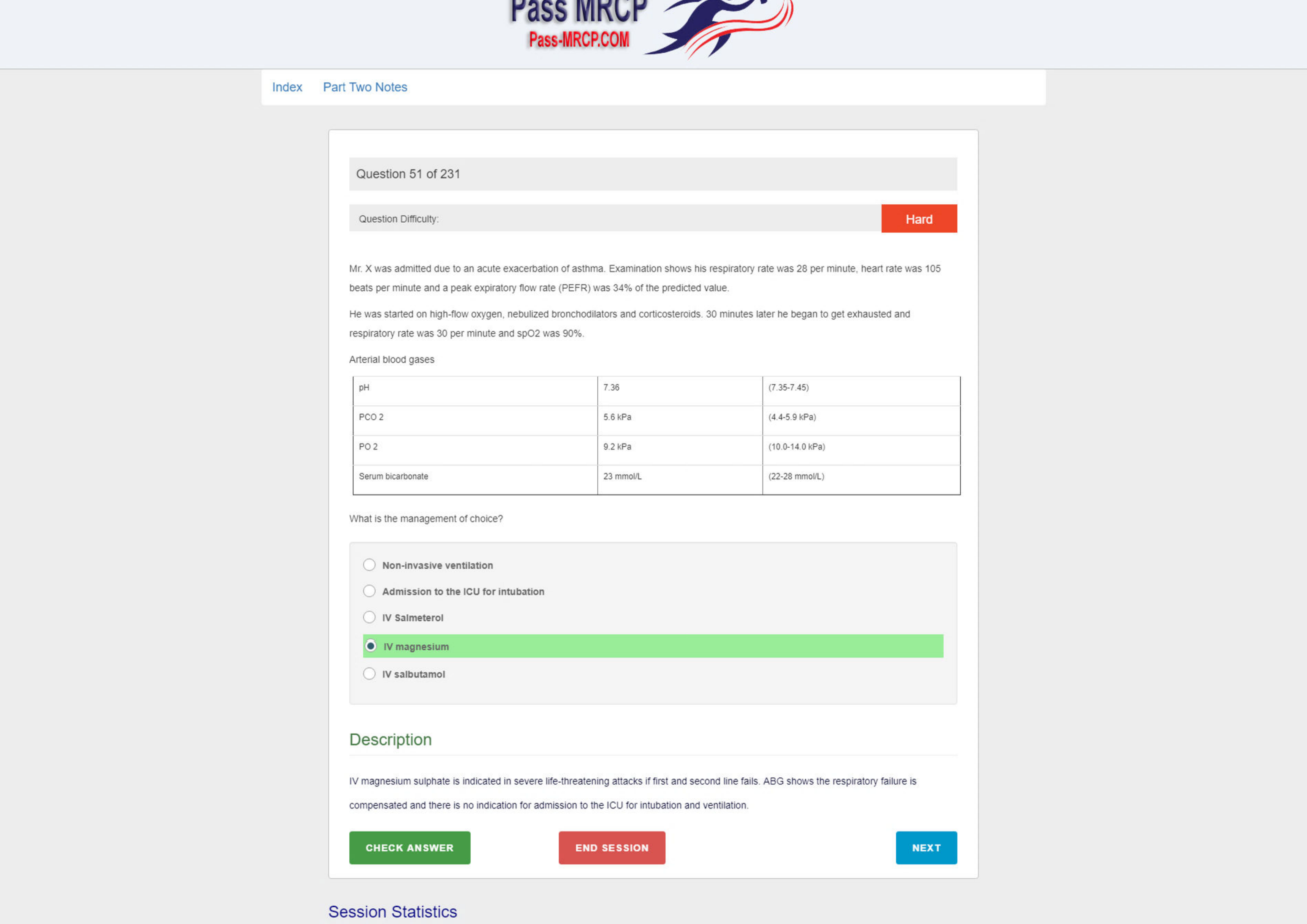
Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1
Age>=65	1

According to CURB-65 score this patient has a score of 1 due to elevated serum urea level so he has mild pneumonia and his mortality is <3%.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 49 ✓ **Correct**: 9 ✕ **Incorrect**: 40 **Average Score**: 18.37 %



Question 51 of 231

Question Difficulty: **Hard**

Mr. X was admitted due to an acute exacerbation of asthma. Examination shows his respiratory rate was 28 per minute, heart rate was 105 beats per minute and a peak expiratory flow rate (PEFR) was 34% of the predicted value.

He was started on high-flow oxygen, nebulized bronchodilators and corticosteroids. 30 minutes later he began to get exhausted and respiratory rate was 30 per minute and spO2 was 90%.

Arterial blood gases

pH	7.36	(7.35-7.45)
PCO 2	5.6 kPa	(4.4-5.9 kPa)
PO 2	9.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	23 mmol/L	(22-28 mmol/L)

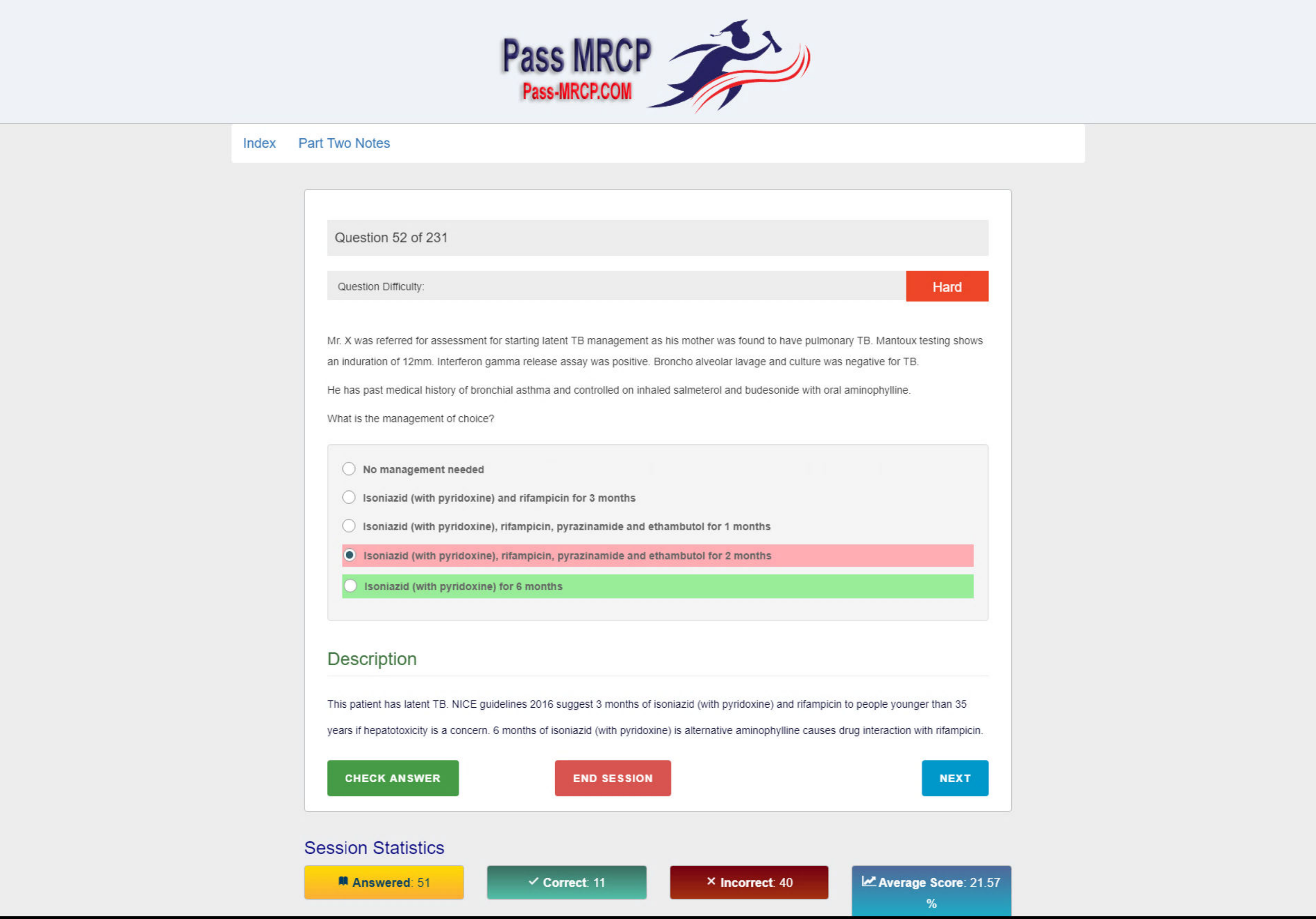
What is the management of choice?

- ○ **Non-invasive ventilation**
- ○ **Admission to the ICU for intubation**
- ○ **IV Salmeterol**
- ● **IV magnesium**
- ○ **IV salbutamol**

Description

IV magnesium sulphate is indicated in severe life-threatening attacks if first and second line fails. ABG shows the respiratory failure is compensated and there is no indication for admission to the ICU for intubation and ventilation.

Session Statistics



Question 52 of 231

Question Difficulty: Hard

Mr. X was referred for assessment for starting latent TB management as his mother was found to have pulmonary TB. Mantoux testing shows an induration of 12mm. Interferon gamma release assay was positive. Broncho alveolar lavage and culture was negative for TB.

He has past medical history of bronchial asthma and controlled on inhaled salmeterol and budesonide with oral aminophylline.

What is the management of choice?

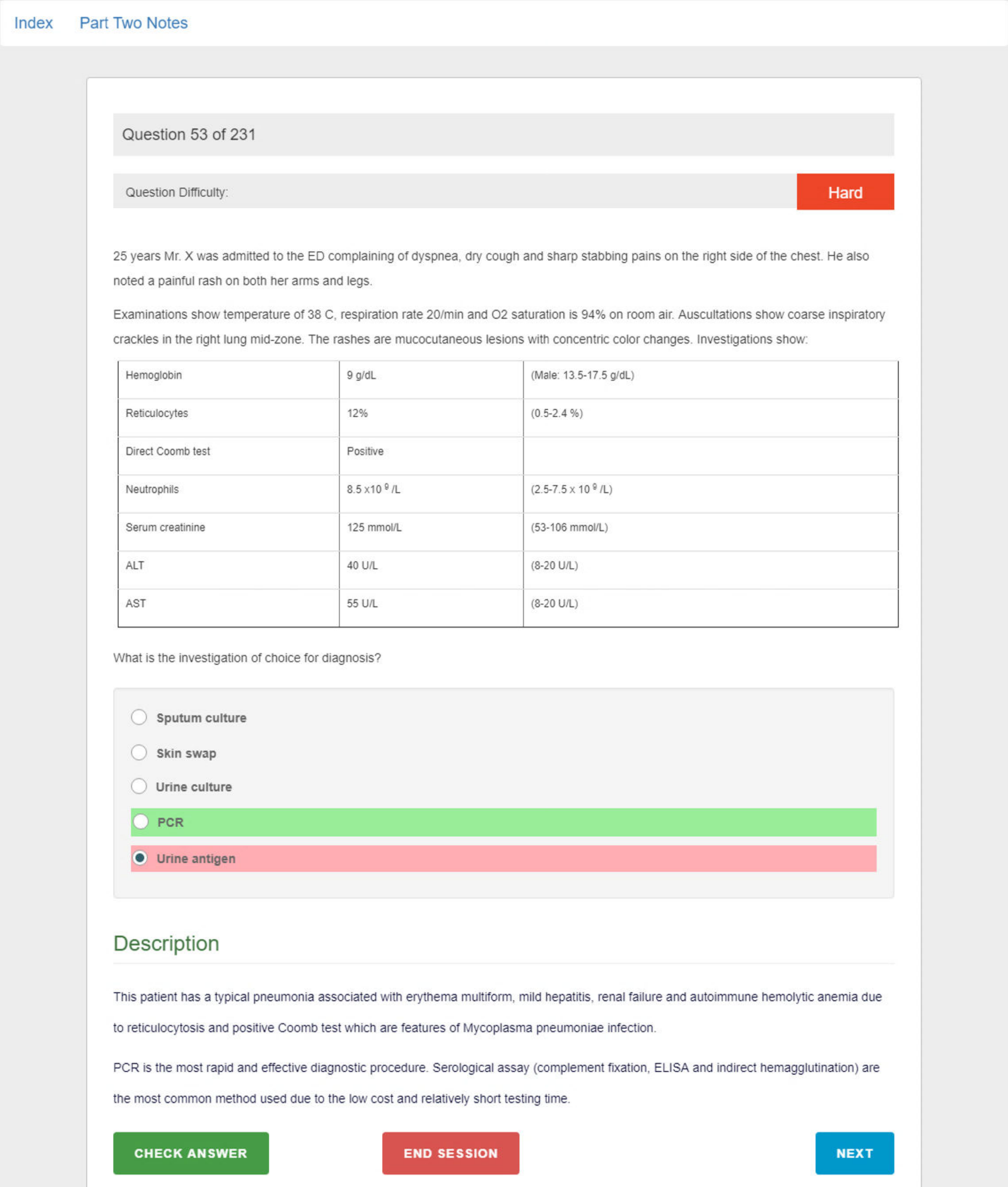
- ○ **No management needed**
- ○ **Isoniazid (with pyridoxine) and rifampicin for 3 months**
- ○ **Isoniazid (with pyridoxine), rifampicin, pyrazinamide and ethambutol for 1 months**
- ● **Isoniazid (with pyridoxine), rifampicin, pyrazinamide and ethambutol for 2 months**
- ○ **Isoniazid (with pyridoxine) for 6 months**

Description

This patient has latent TB. NICE guidelines 2016 suggest 3 months of isoniazid (with pyridoxine) and rifampicin to people younger than 35 years if hepatotoxicity is a concern. 6 months of isoniazid (with pyridoxine) is alternative aminophylline causes drug interaction with rifampicin.

Session Statistics

Answered: 51
✓ **Correct**: 11
✕ **Incorrect**: 40
Average Score: 21.57 %



Question 53 of 231

Question Difficulty: Hard

25 years Mr. X was admitted to the ED complaining of dyspnea, dry cough and sharp stabbing pains on the right side of the chest. He also noted a painful rash on both her arms and legs.

Examinations show temperature of 38 C, respiration rate 20/min and O2 saturation is 94% on room air. Auscultations show coarse inspiratory crackles in the right lung mid-zone. The rashes are mucocutaneous lesions with concentric color changes. Investigations show:

Hemoglobin	9 g/dL	(Male: 13.5-17.5 g/dL)
Reticulocytes	12%	(0.5-2.4 %)
Direct Coomb test	Positive	
Neutrophils	8.5 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)

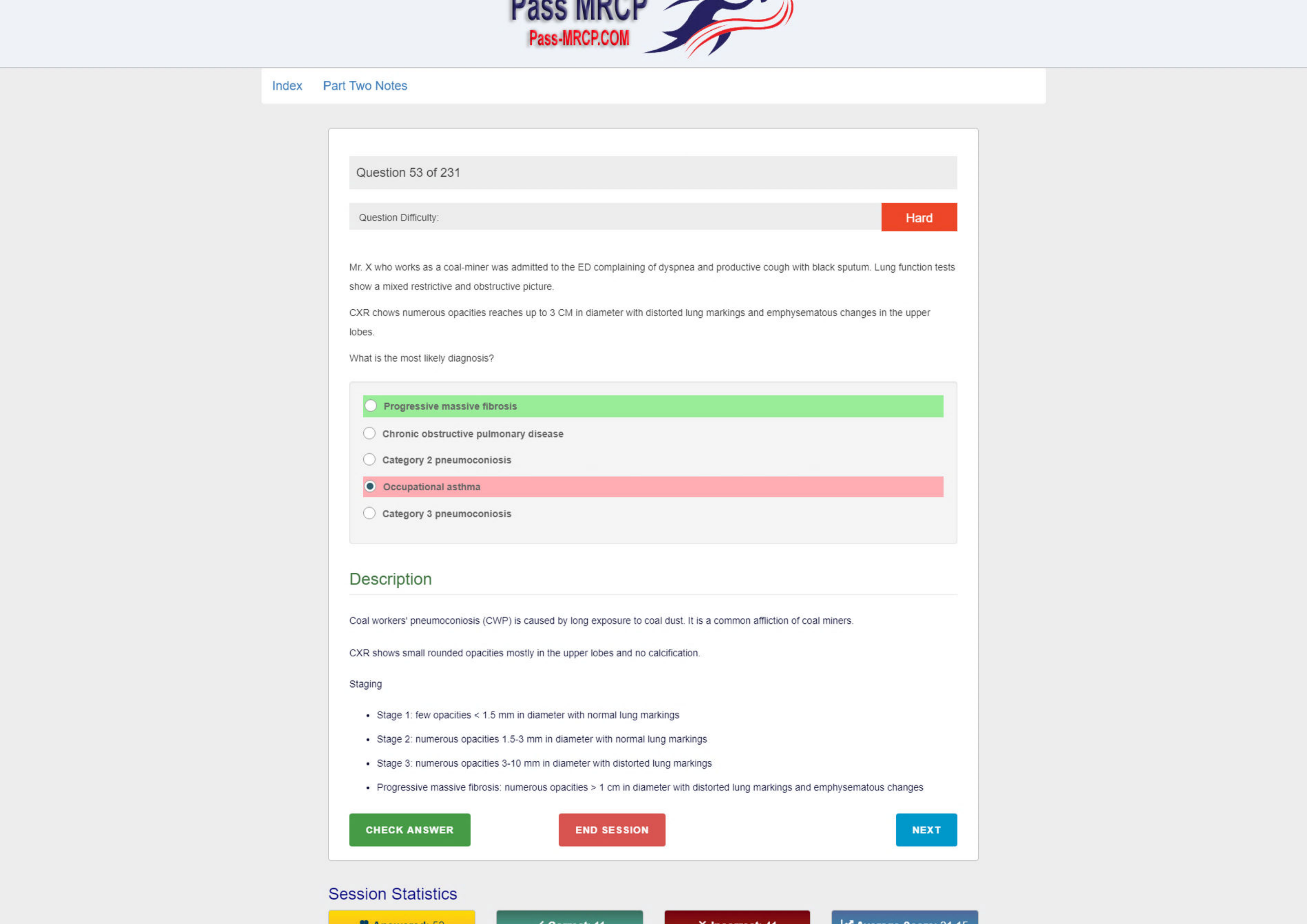
What is the investigation of choice for diagnosis?

- ○ **Sputum culture**
- ○ **Skin swap**
- ○ **Urine culture**
- ○ **PCR**
- ● **Urine antigen**

Description

This patient has a typical pneumonia associated with erythema multiform, mild hepatitis, renal failure and autoimmune hemolytic anemia due to reticulocytosis and positive Coomb test which are features of Mycoplasma pneumoniae infection.

PCR is the most rapid and effective diagnostic procedure. Serological assay (complement fixation, ELISA and indirect hemagglutination) are the most common method used due to the low cost and relatively short testing time.



Question 53 of 231

Question Difficulty: Hard

Mr. X who works as a coal-miner was admitted to the ED complaining of dyspnea and productive cough with black sputum. Lung function tests show a mixed restrictive and obstructive picture.

CXR chows numerous opacities reaches up to 3 CM in diameter with distorted lung markings and emphysematous changes in the upper lobes.

What is the most likely diagnosis?

○ **Progressive massive fibrosis**
○ **Chronic obstructive pulmonary disease**
○ **Category 2 pneumoconiosis**
● **Occupational asthma**
○ **Category 3 pneumoconiosis**

Description

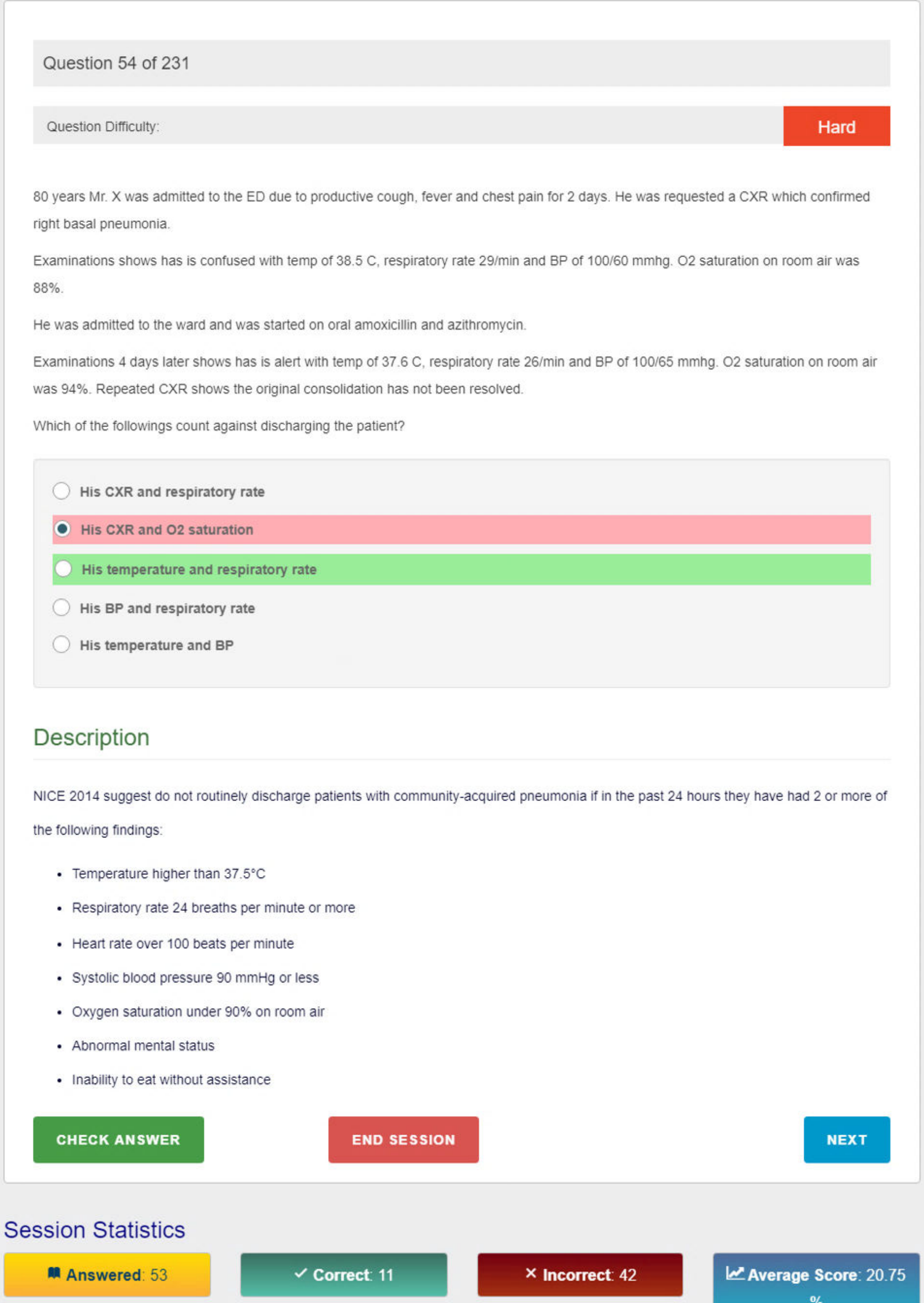
Coal workers' pneumoconiosis (CWP) is caused by long exposure to coal dust. It is a common affliction of coal miners.

CXR shows small rounded opacities mostly in the upper lobes and no calcification.

Staging

- Stage 1: few opacities < 1.5 mm in diameter with normal lung markings
- Stage 2: numerous opacities 1.5-3 mm in diameter with normal lung markings
- Stage 3: numerous opacities 3-10 mm in diameter with distorted lung markings
- Progressive massive fibrosis: numerous opacities > 1 cm in diameter with distorted lung markings and emphysematous changes

Session Statistics



Question 54 of 231

Question Difficulty: **Hard**

80 years Mr. X was admitted to the ED due to productive cough, fever and chest pain for 2 days. He was requested a CXR which confirmed right basal pneumonia.

Examinations shows has is confused with temp of 38.5 C, respiratory rate 29/min and BP of 100/60 mmhg. O2 saturation on room air was 88%.

He was admitted to the ward and was started on oral amoxicillin and azithromycin.

Examinations 4 days later shows has is alert with temp of 37.6 C, respiratory rate 26/min and BP of 100/65 mmhg. O2 saturation on room air was 94%. Repeated CXR shows the original consolidation has not been resolved.

Which of the followings count against discharging the patient?

○ **His CXR and respiratory rate**

● **His CXR and O2 saturation**

○ **His temperature and respiratory rate**

○ **His BP and respiratory rate**

○ **His temperature and BP**

Description

NICE 2014 suggest do not routinely discharge patients with community-acquired pneumonia if in the past 24 hours they have had 2 or more of the following findings:

- Temperature higher than 37.5°C
- Respiratory rate 24 breaths per minute or more
- Heart rate over 100 beats per minute
- Systolic blood pressure 90 mmHg or less
- Oxygen saturation under 90% on room air
- Abnormal mental status
- Inability to eat without assistance

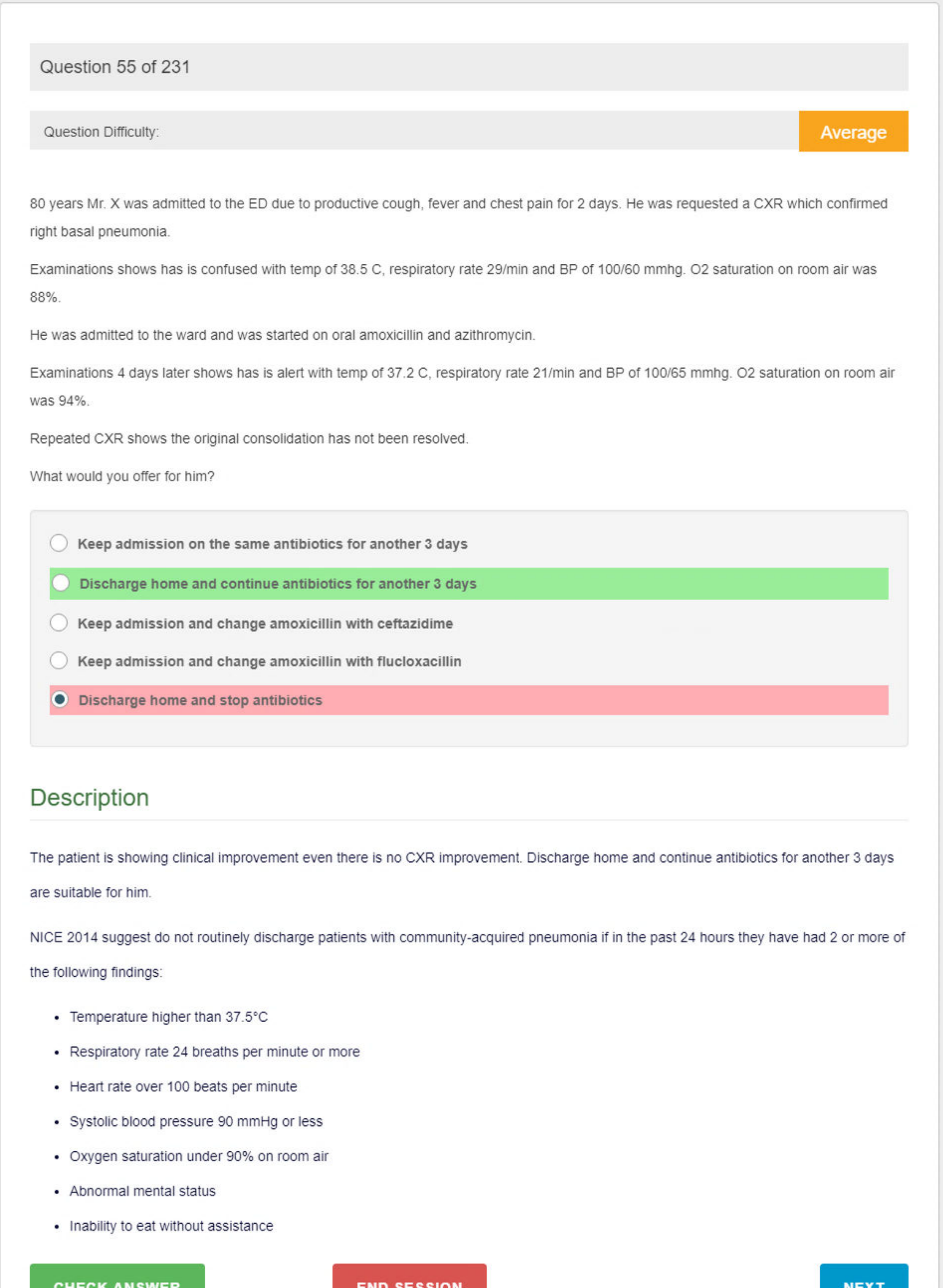
Session Statistics

Answered: 53

✓ **Correct**: 11

✕ **Incorrect**: 42

Average Score: 20.75 %



Question 55 of 231

Question Difficulty: Average

80 years Mr. X was admitted to the ED due to productive cough, fever and chest pain for 2 days. He was requested a CXR which confirmed right basal pneumonia.

Examinations shows has is confused with temp of 38.5 C, respiratory rate 29/min and BP of 100/60 mmhg. O2 saturation on room air was 88%.

He was admitted to the ward and was started on oral amoxicillin and azithromycin.

Examinations 4 days later shows has is alert with temp of 37.2 C, respiratory rate 21/min and BP of 100/65 mmhg. O2 saturation on room air was 94%.

Repeated CXR shows the original consolidation has not been resolved.

What would you offer for him?

○ **Keep admission on the same antibiotics for another 3 days**

○ **Discharge home and continue antibiotics for another 3 days**

○ **Keep admission and change amoxicillin with ceftazidime**

○ **Keep admission and change amoxicillin with flucloxacillin**

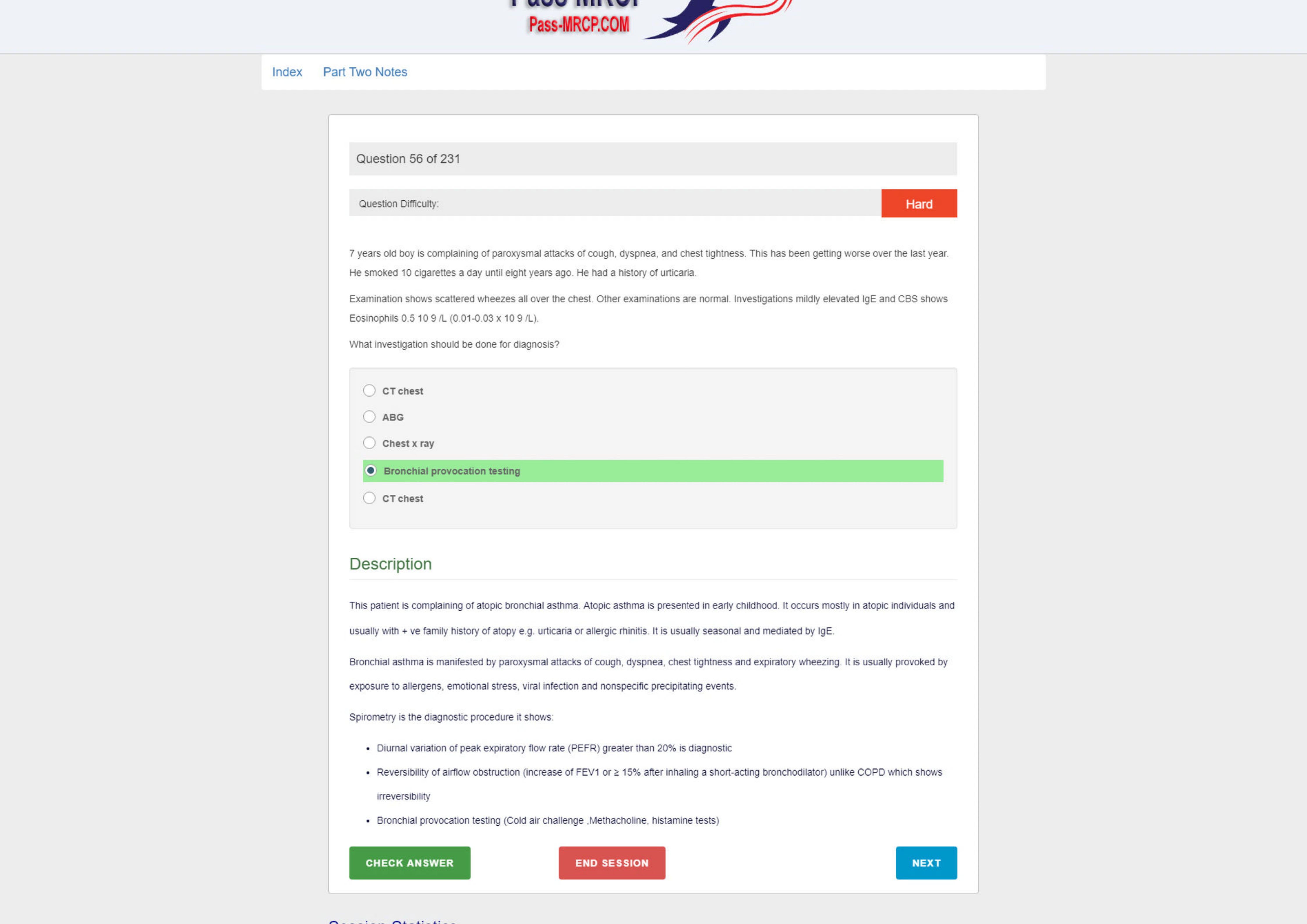
● **Discharge home and stop antibiotics**

Description

The patient is showing clinical improvement even there is no CXR improvement. Discharge home and continue antibiotics for another 3 days are suitable for him.

NICE 2014 suggest do not routinely discharge patients with community-acquired pneumonia if in the past 24 hours they have had 2 or more of the following findings:

- Temperature higher than 37.5°C
- Respiratory rate 24 breaths per minute or more
- Heart rate over 100 beats per minute
- Systolic blood pressure 90 mmHg or less
- Oxygen saturation under 90% on room air
- Abnormal mental status
- Inability to eat without assistance



Question 56 of 231

Question Difficulty: **Hard**

7 years old boy is complaining of paroxysmal attacks of cough, dyspnea, and chest tightness. This has been getting worse over the last year. He smoked 10 cigarettes a day until eight years ago. He had a history of urticaria.

Examination shows scattered wheezes all over the chest. Other examinations are normal. Investigations mildly elevated IgE and CBS shows Eosinophils 0.5 10 9 /L (0.01-0.03 x 10 9 /L).

What investigation should be done for diagnosis?

○ **CT chest**
○ **ABG**
○ **Chest x ray**
● **Bronchial provocation testing**
○ **CT chest**

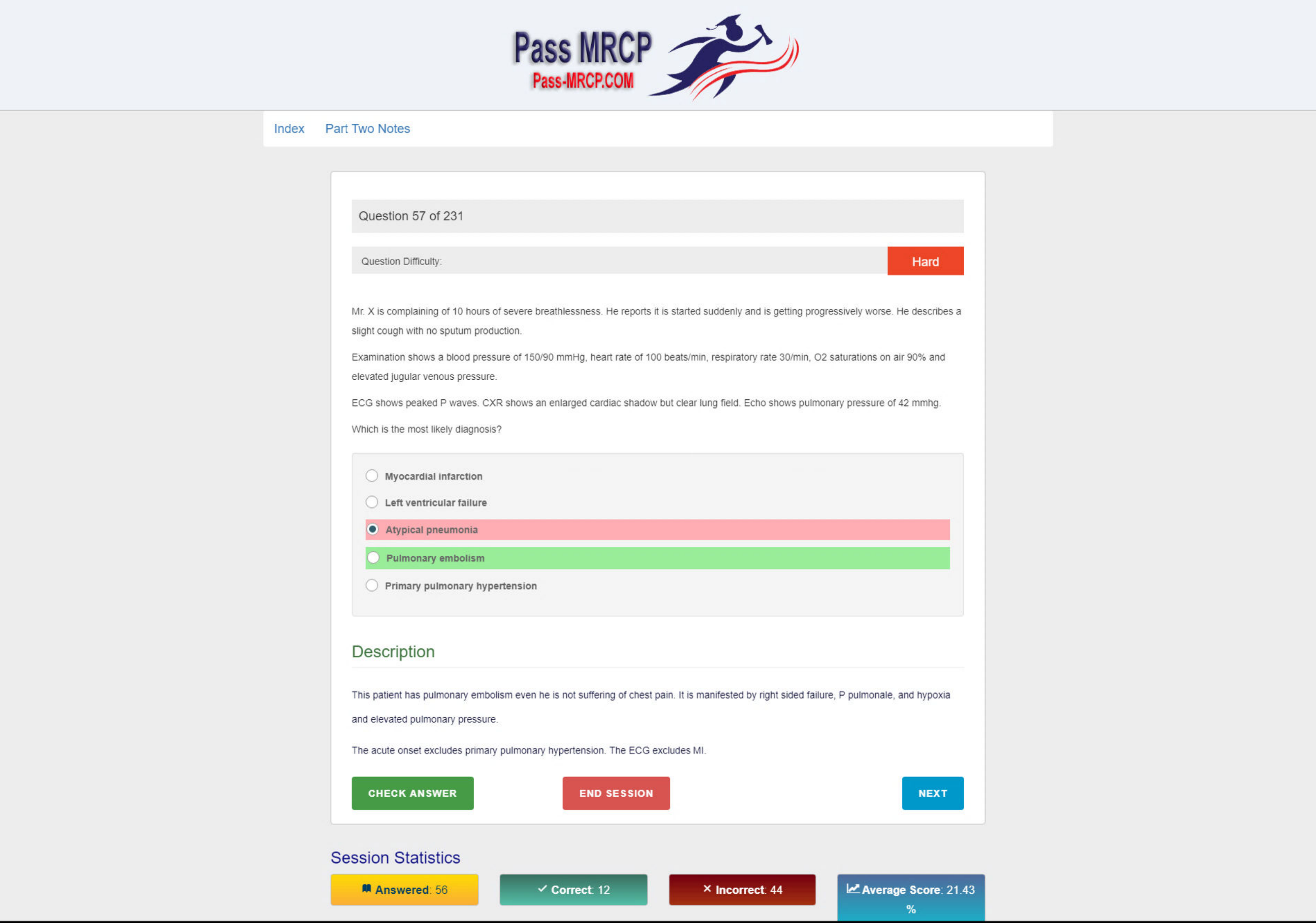
Description

This patient is complaining of atopic bronchial asthma. Atopic asthma is presented in early childhood. It occurs mostly in atopic individuals and usually with + ve family history of atopy e.g. urticaria or allergic rhinitis. It is usually seasonal and mediated by IgE.

Bronchial asthma is manifested by paroxysmal attacks of cough, dyspnea, chest tightness and expiratory wheezing. It is usually provoked by exposure to allergens, emotional stress, viral infection and nonspecific precipitating events.

Spirometry is the diagnostic procedure it shows:

- Diurnal variation of peak expiratory flow rate (PEFR) greater than 20% is diagnostic
- Reversibility of airflow obstruction (increase of FEV1 or ≥ 15% after inhaling a short-acting bronchodilator) unlike COPD which shows irreversibility
- Bronchial provocation testing (Cold air challenge ,Methacholine, histamine tests)



Question 57 of 231

Question Difficulty: **Hard**

Mr. X is complaining of 10 hours of severe breathlessness. He reports it is started suddenly and is getting progressively worse. He describes a slight cough with no sputum production.

Examination shows a blood pressure of 150/90 mmHg, heart rate of 100 beats/min, respiratory rate 30/min, O2 saturations on air 90% and elevated jugular venous pressure.

ECG shows peaked P waves. CXR shows an enlarged cardiac shadow but clear lung field. Echo shows pulmonary pressure of 42 mmhg.

Which is the most likely diagnosis?

- ○ **Myocardial infarction**
- ○ **Left ventricular failure**
- ● **Atypical pneumonia**
- ○ **Pulmonary embolism**
- ○ **Primary pulmonary hypertension**

Description

This patient has pulmonary embolism even he is not suffering of chest pain. It is manifested by right sided failure, P pulmonale, and hypoxia and elevated pulmonary pressure.

The acute onset excludes primary pulmonary hypertension. The ECG excludes MI.

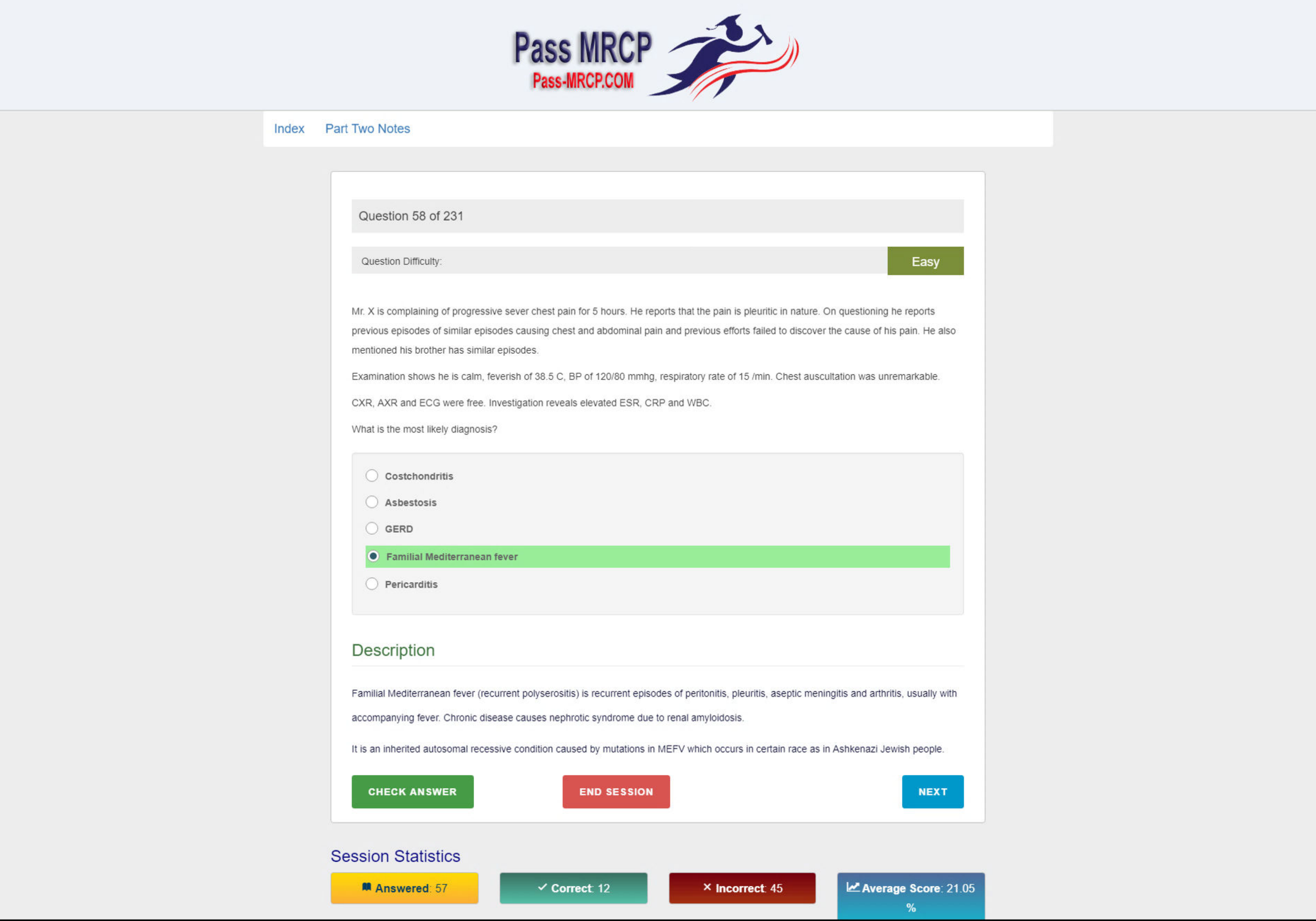
Session Statistics

Answered: 56

Correct: 12

Incorrect: 44

Average Score: 21.43 %



Question 58 of 231

Question Difficulty: Easy

Mr. X is complaining of progressive sever chest pain for 5 hours. He reports that the pain is pleuritic in nature. On questioning he reports previous episodes of similar episodes causing chest and abdominal pain and previous efforts failed to discover the cause of his pain. He also mentioned his brother has similar episodes.

Examination shows he is calm, feverish of 38.5 C, BP of 120/80 mmhg, respiratory rate of 15 /min. Chest auscultation was unremarkable.

CXR, AXR and ECG were free. Investigation reveals elevated ESR, CRP and WBC.

What is the most likely diagnosis?

- ○ Costchondritis
- ○ Asbestosis
- ○ GERD
- ● Familial Mediterranean fever
- ○ Pericarditis

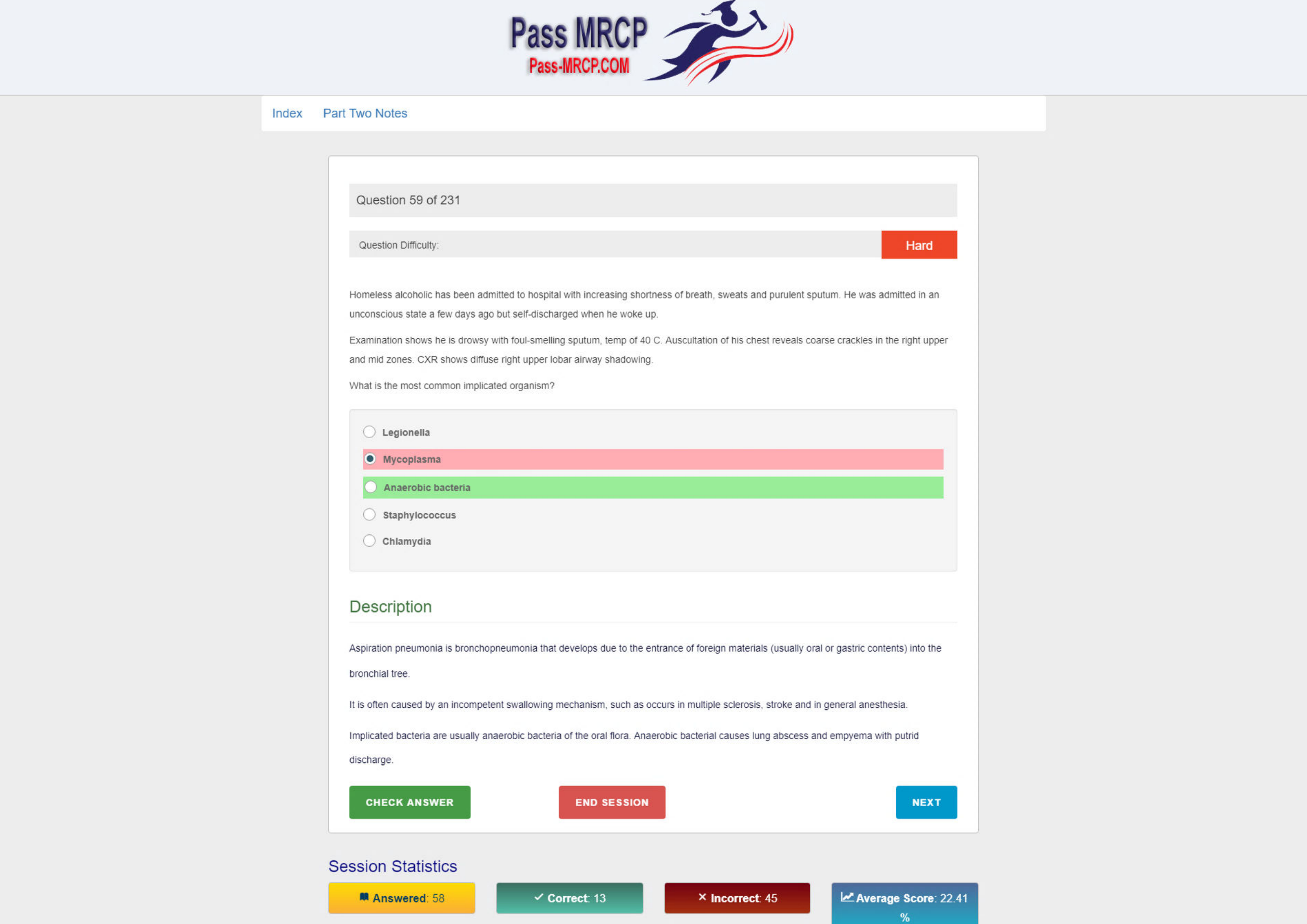
Description

Familial Mediterranean fever (recurrent polyserositis) is recurrent episodes of peritonitis, pleuritis, aseptic meningitis and arthritis, usually with accompanying fever. Chronic disease causes nephrotic syndrome due to renal amyloidosis.

It is an inherited autosomal recessive condition caused by mutations in MEFV which occurs in certain race as in Ashkenazi Jewish people.

Session Statistics

Answered: 57
Correct: 12
Incorrect: 45
Average Score: 21.05 %



Question 59 of 231

Question Difficulty: **Hard**

Homeless alcoholic has been admitted to hospital with increasing shortness of breath, sweats and purulent sputum. He was admitted in an unconscious state a few days ago but self-discharged when he woke up.

Examination shows he is drowsy with foul-smelling sputum, temp of 40 C. Auscultation of his chest reveals coarse crackles in the right upper and mid zones. CXR shows diffuse right upper lobar airway shadowing.

What is the most common implicated organism?

- ○ **Legionella**
- ● **Mycoplasma**
- ○ **Anaerobic bacteria**
- ○ **Staphylococcus**
- ○ **Chlamydia**

Description

Aspiration pneumonia is bronchopneumonia that develops due to the entrance of foreign materials (usually oral or gastric contents) into the bronchial tree.

It is often caused by an incompetent swallowing mechanism, such as occurs in multiple sclerosis, stroke and in general anesthesia.

Implicated bacteria are usually anaerobic bacteria of the oral flora. Anaerobic bacterial causes lung abscess and empyema with putrid discharge.

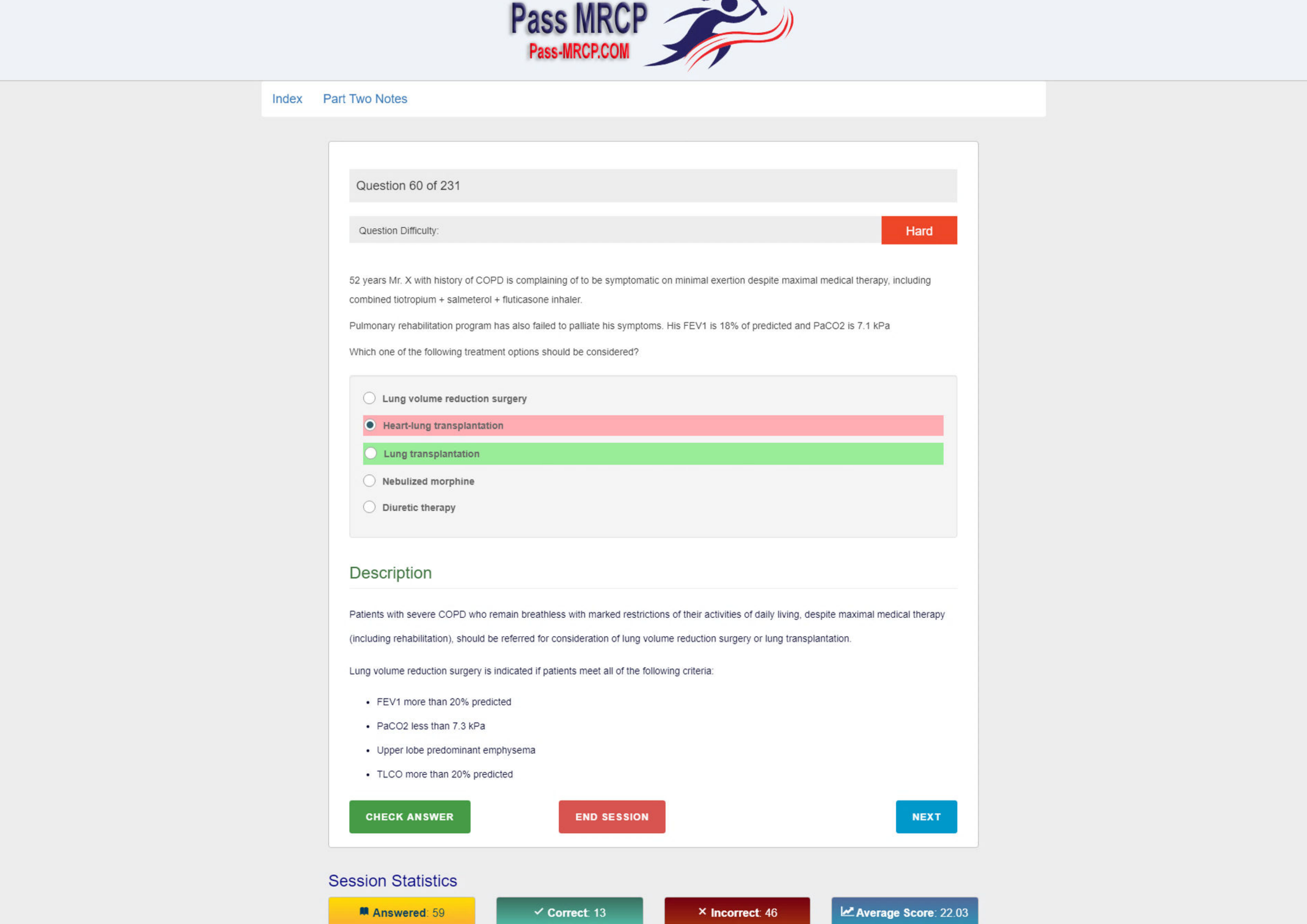
Session Statistics

Answered: 58

✓ **Correct**: 13

× **Incorrect**: 45

Average Score: 22.41 %



Question 60 of 231

Question Difficulty: **Hard**

52 years Mr. X with history of COPD is complaining of to be symptomatic on minimal exertion despite maximal medical therapy, including combined tiotropium + salmeterol + fluticasone inhaler.

Pulmonary rehabilitation program has also failed to palliate his symptoms. His FEV1 is 18% of predicted and PaCO2 is 7.1 kPa

Which one of the following treatment options should be considered?

○ **Lung volume reduction surgery**
● **Heart-lung transplantation**
○ **Lung transplantation**
○ **Nebulized morphine**
○ **Diuretic therapy**

Description

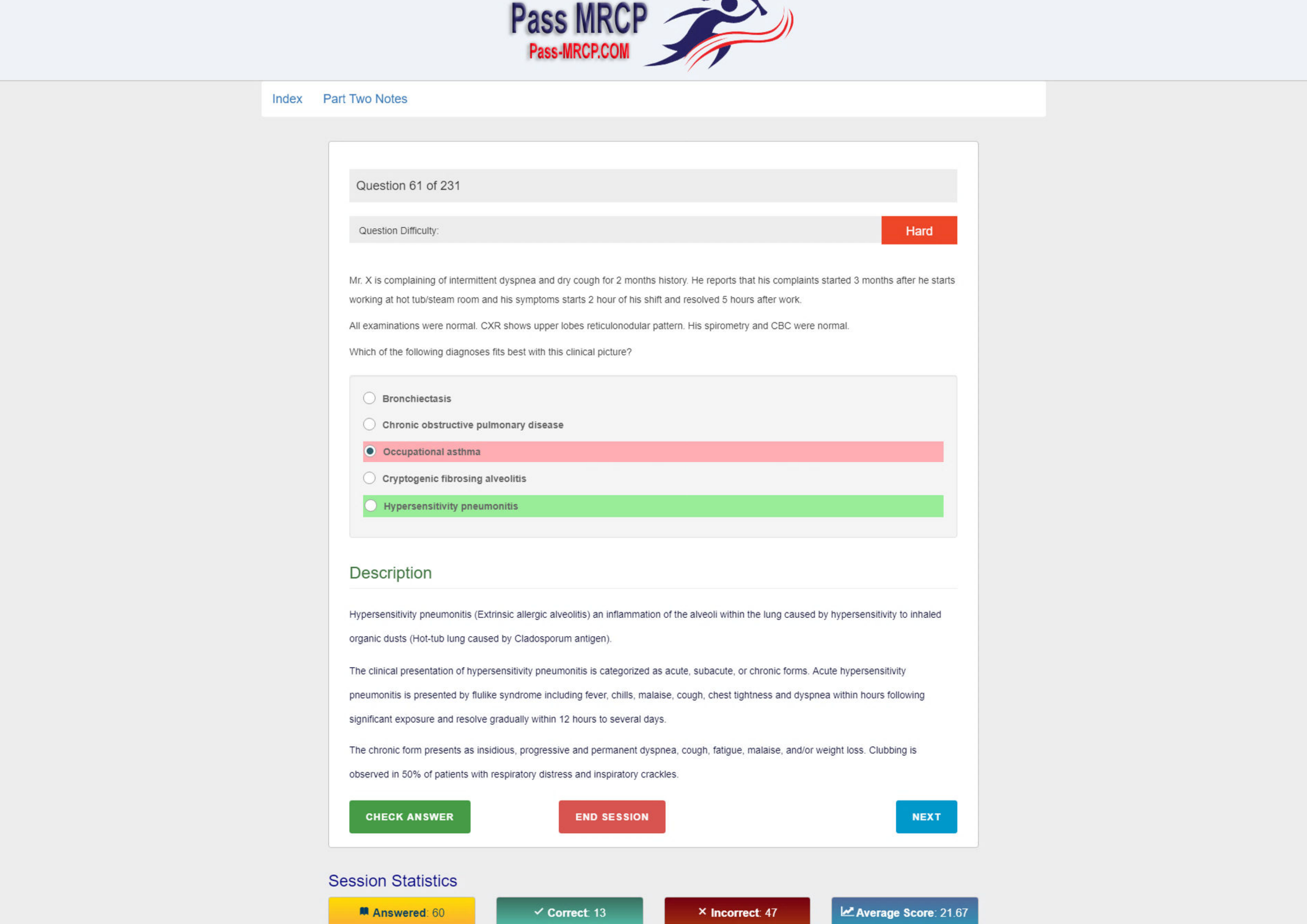
Patients with severe COPD who remain breathless with marked restrictions of their activities of daily living, despite maximal medical therapy (including rehabilitation), should be referred for consideration of lung volume reduction surgery or lung transplantation.

Lung volume reduction surgery is indicated if patients meet all of the following criteria:

- FEV1 more than 20% predicted
- PaCO2 less than 7.3 kPa
- Upper lobe predominant emphysema
- TLCO more than 20% predicted

Session Statistics

Answered: 59
Correct: 13
Incorrect: 46
Average Score: 22.03



Question 61 of 231

Question Difficulty: Hard

Mr. X is complaining of intermittent dyspnea and dry cough for 2 months history. He reports that his complaints started 3 months after he starts working at hot tub/steam room and his symptoms starts 2 hour of his shift and resolved 5 hours after work.

All examinations were normal. CXR shows upper lobes reticulonodular pattern. His spirometry and CBC were normal.

Which of the following diagnoses fits best with this clinical picture?

- ○ **Bronchiectasis**
- ○ **Chronic obstructive pulmonary disease**
- ● **Occupational asthma**
- ○ **Cryptogenic fibrosing alveolitis**
- ○ **Hypersensitivity pneumonitis**

Description

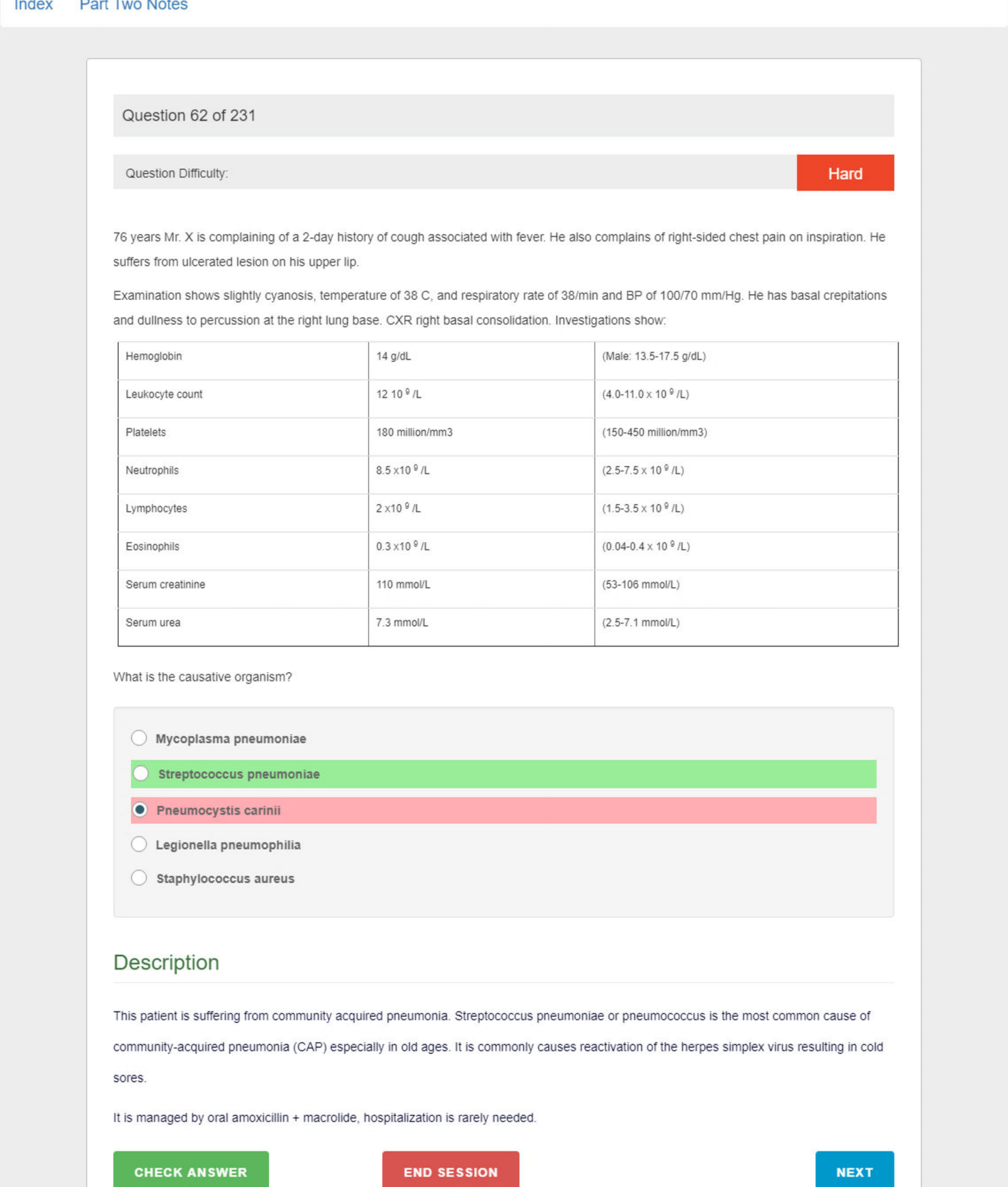
Hypersensitivity pneumonitis (Extrinsic allergic alveolitis) an inflammation of the alveoli within the lung caused by hypersensitivity to inhaled organic dusts (Hot-tub lung caused by Cladosporum antigen).

The clinical presentation of hypersensitivity pneumonitis is categorized as acute, subacute, or chronic forms. Acute hypersensitivity pneumonitis is presented by flulike syndrome including fever, chills, malaise, cough, chest tightness and dyspnea within hours following significant exposure and resolve gradually within 12 hours to several days.

The chronic form presents as insidious, progressive and permanent dyspnea, cough, fatigue, malaise, and/or weight loss. Clubbing is observed in 50% of patients with respiratory distress and inspiratory crackles.

Session Statistics

Answered: 60
Correct: 13
Incorrect: 47
Average Score: 21.67



Question 62 of 231

Question Difficulty: Hard

76 years Mr. X is complaining of a 2-day history of cough associated with fever. He also complains of right-sided chest pain on inspiration. He suffers from ulcerated lesion on his upper lip.

Examination shows slightly cyanosis, temperature of 38 C, and respiratory rate of 38/min and BP of 100/70 mm/Hg. He has basal crepitations and dullness to percussion at the right lung base. CXR right basal consolidation. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	$12\ 10^{9}$ /L	($4.0\text{-}11.0 \times 10^{9}$ /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5×10^{9} /L	($2.5\text{-}7.5 \times 10^{9}$ /L)
Lymphocytes	2×10^{9} /L	($1.5\text{-}3.5 \times 10^{9}$ /L)
Eosinophils	0.3×10^{9} /L	($0.04\text{-}0.4 \times 10^{9}$ /L)
Serum creatinine	110 mmol/L	(53-106 mmol/L)
Serum urea	7.3 mmol/L	(2.5-7.1 mmol/L)

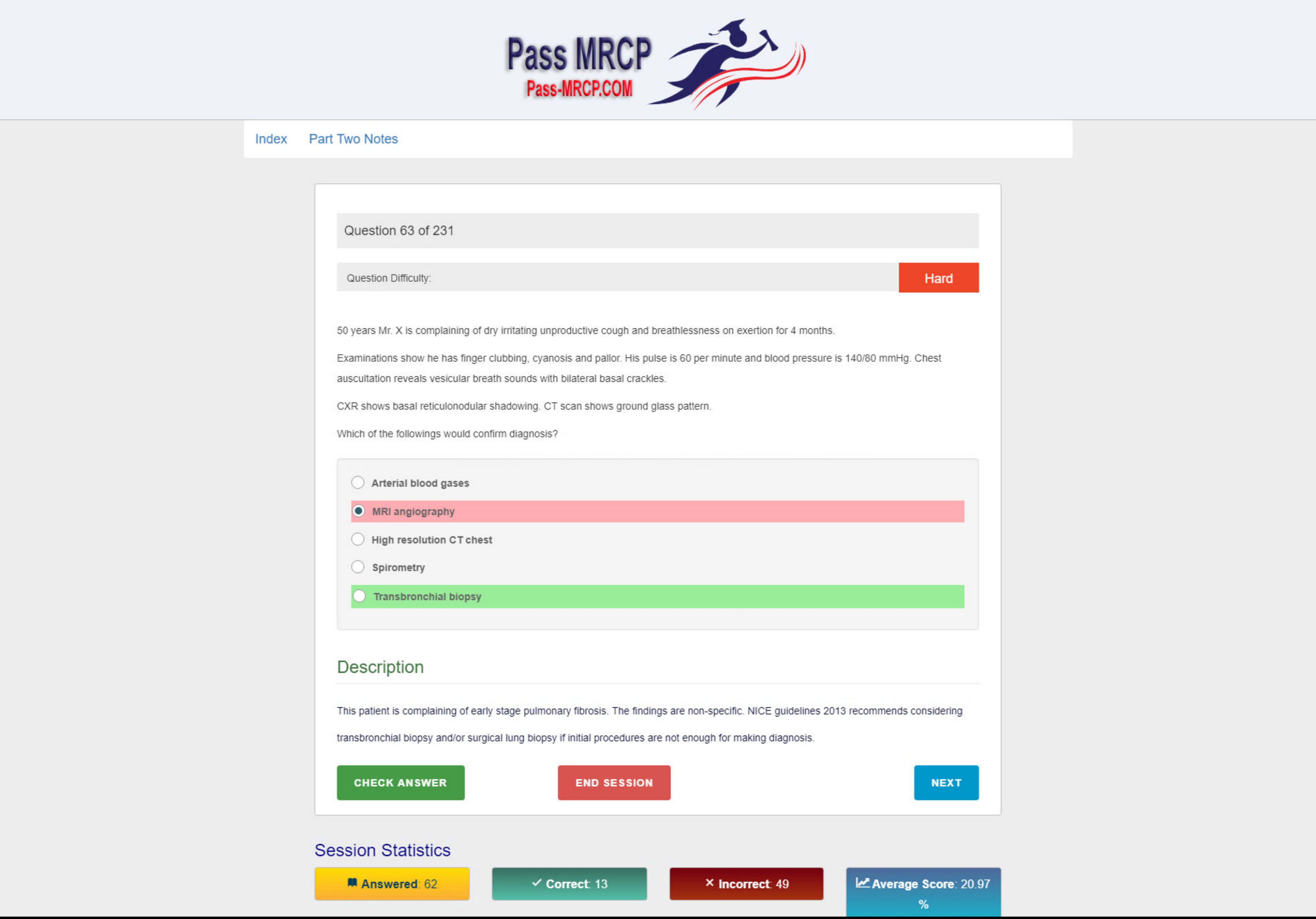
What is the causative organism?

○ **Mycoplasma pneumoniae**
○ **Streptococcus pneumoniae**
● **Pneumocystis carinii**
○ **Legionella pneumophilia**
○ **Staphylococcus aureus**

Description

This patient is suffering from community acquired pneumonia. Streptococcus pneumoniae or pneumococcus is the most common cause of community-acquired pneumonia (CAP) especially in old ages. It is commonly causes reactivation of the herpes simplex virus resulting in cold sores.

It is managed by oral amoxicillin + macrolide, hospitalization is rarely needed.



Question 63 of 231

Question Difficulty: Hard

50 years Mr. X is complaining of dry irritating unproductive cough and breathlessness on exertion for 4 months.

Examinations show he has finger clubbing, cyanosis and pallor. His pulse is 60 per minute and blood pressure is 140/80 mmHg. Chest auscultation reveals vesicular breath sounds with bilateral basal crackles.

CXR shows basal reticulonodular shadowing. CT scan shows ground glass pattern.

Which of the followings would confirm diagnosis?

- ○ **Arterial blood gases**
- ● **MRI angiography**
- ○ **High resolution CT chest**
- ○ **Spirometry**
- ○ **Transbronchial biopsy**

Description

This patient is complaining of early stage pulmonary fibrosis. The findings are non-specific. NICE guidelines 2013 recommends considering transbronchial biopsy and/or surgical lung biopsy if initial procedures are not enough for making diagnosis.

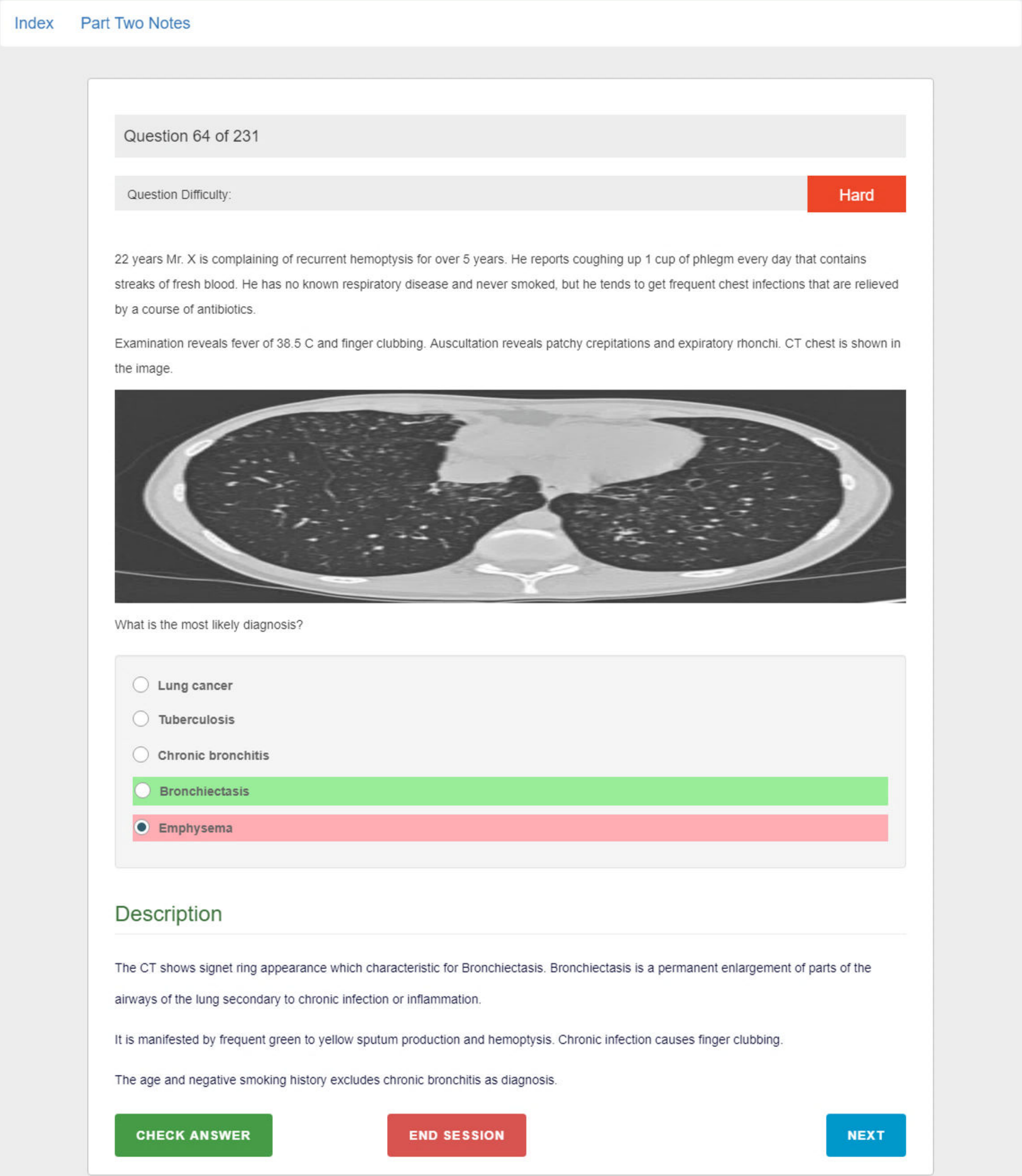
Session Statistics

Answered: 62

✓ **Correct**: 13

✕ **Incorrect**: 49

Average Score: 20.97 %



Question 64 of 231

Question Difficulty: **Hard**

22 years Mr. X is complaining of recurrent hemoptysis for over 5 years. He reports coughing up 1 cup of phlegm every day that contains streaks of fresh blood. He has no known respiratory disease and never smoked, but he tends to get frequent chest infections that are relieved by a course of antibiotics.

Examination reveals fever of 38.5 C and finger clubbing. Auscultation reveals patchy crepitations and expiratory rhonchi. CT chest is shown in the image.

What is the most likely diagnosis?

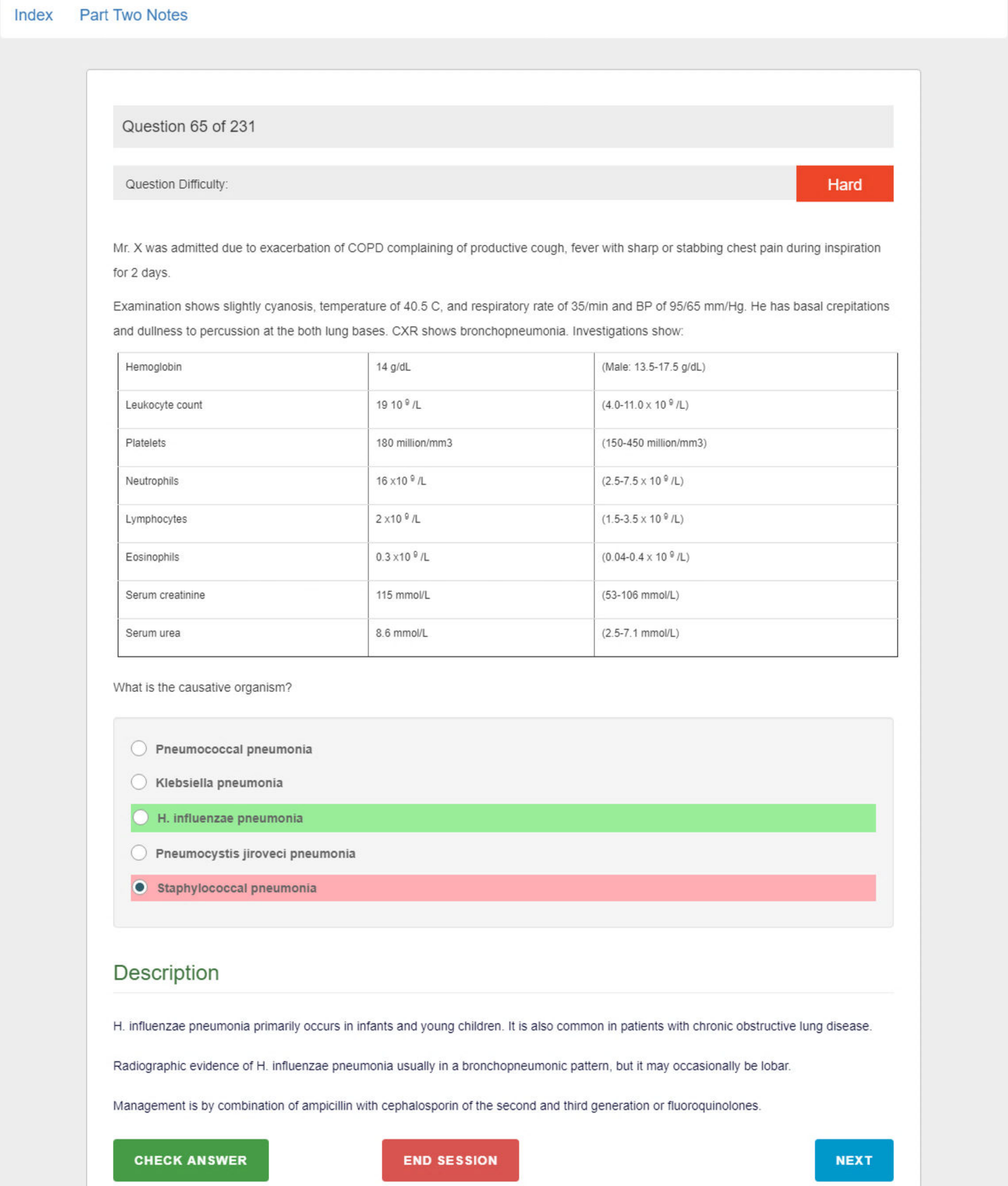
○ **Lung cancer**
○ **Tuberculosis**
○ **Chronic bronchitis**
○ **Bronchiectasis**
● **Emphysema**

Description

The CT shows signet ring appearance which characteristic for Bronchiectasis. Bronchiectasis is a permanent enlargement of parts of the airways of the lung secondary to chronic infection or inflammation.

It is manifested by frequent green to yellow sputum production and hemoptysis. Chronic infection causes finger clubbing.

The age and negative smoking history excludes chronic bronchitis as diagnosis.



Question 65 of 231

Question Difficulty: **Hard**

Mr. X was admitted due to exacerbation of COPD complaining of productive cough, fever with sharp or stabbing chest pain during inspiration for 2 days.

Examination shows slightly cyanosis, temperature of 40.5 C, and respiratory rate of 35/min and BP of 95/65 mm/Hg. He has basal crepitations and dullness to percussion at the both lung bases. CXR shows bronchopneumonia. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	2 x10^{9} /L	(1.5-3.5 x 10^{9} /L)
Eosinophils	0.3 x10^{9} /L	(0.04-0.4 x 10^{9} /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	8.6 mmol/L	(2.5-7.1 mmol/L)

What is the causative organism?

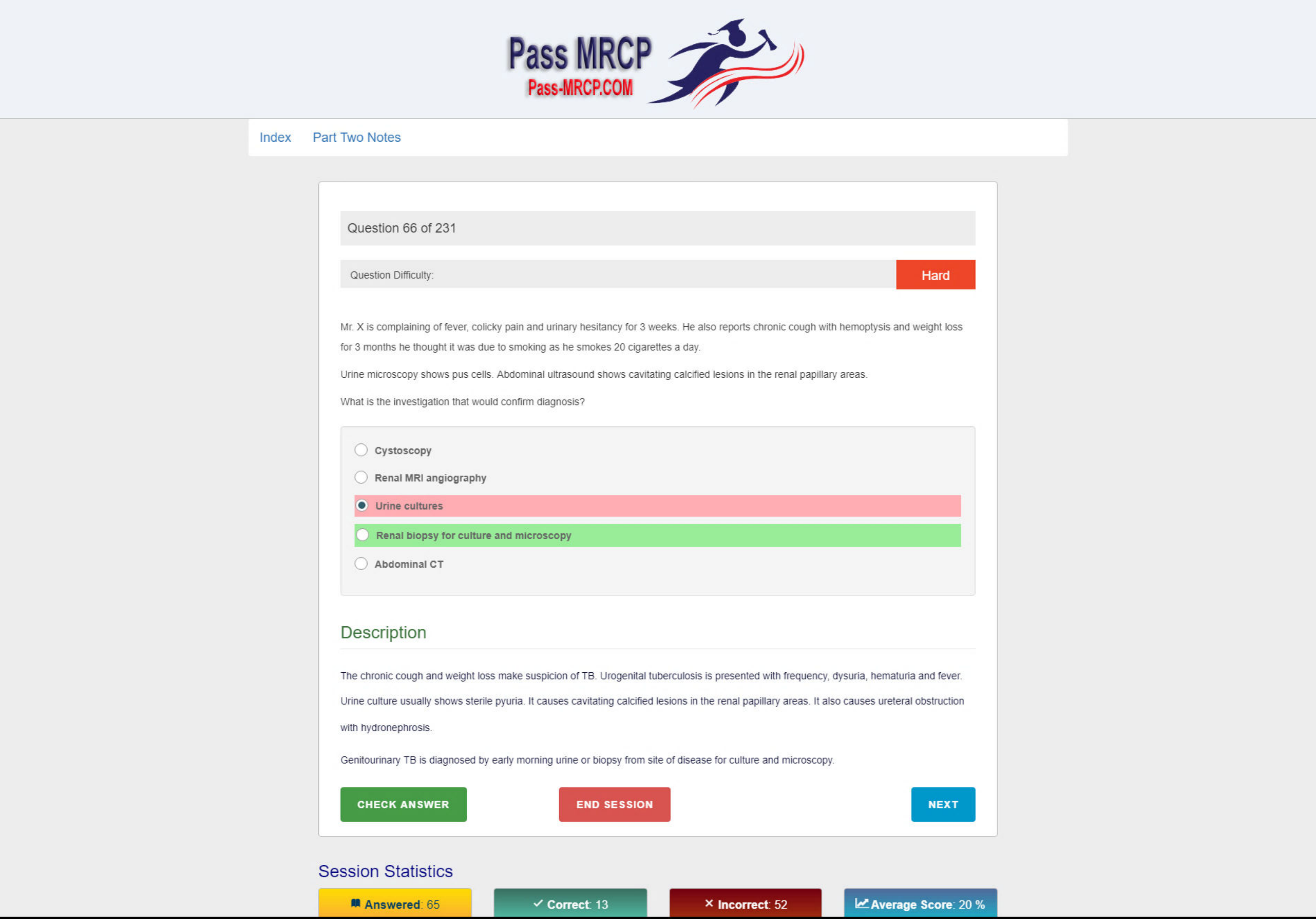
- ○ **Pneumococcal pneumonia**
- ○ **Klebsiella pneumonia**
- ○ **H. influenzae pneumonia**
- ○ **Pneumocystis jiroveci pneumonia**
- ● **Staphylococcal pneumonia**

Description

H. influenzae pneumonia primarily occurs in infants and young children. It is also common in patients with chronic obstructive lung disease.

Radiographic evidence of H. influenzae pneumonia usually in a bronchopneumonic pattern, but it may occasionally be lobar.

Management is by combination of ampicillin with cephalosporin of the second and third generation or fluoroquinolones.



Question 66 of 231

Question Difficulty: **Hard**

Mr. X is complaining of fever, colicky pain and urinary hesitancy for 3 weeks. He also reports chronic cough with hemoptysis and weight loss for 3 months he thought it was due to smoking as he smokes 20 cigarettes a day.

Urine microscopy shows pus cells. Abdominal ultrasound shows cavitating calcified lesions in the renal papillary areas.

What is the investigation that would confirm diagnosis?

- ○ **Cystoscopy**
- ○ **Renal MRI angiography**
- ● **Urine cultures**
- ○ **Renal biopsy for culture and microscopy**
- ○ **Abdominal CT**

Description

The chronic cough and weight loss make suspicion of TB. Urogenital tuberculosis is presented with frequency, dysuria, hematuria and fever. Urine culture usually shows sterile pyuria. It causes cavitating calcified lesions in the renal papillary areas. It also causes ureteral obstruction with hydronephrosis.

Genitourinary TB is diagnosed by early morning urine or biopsy from site of disease for culture and microscopy.

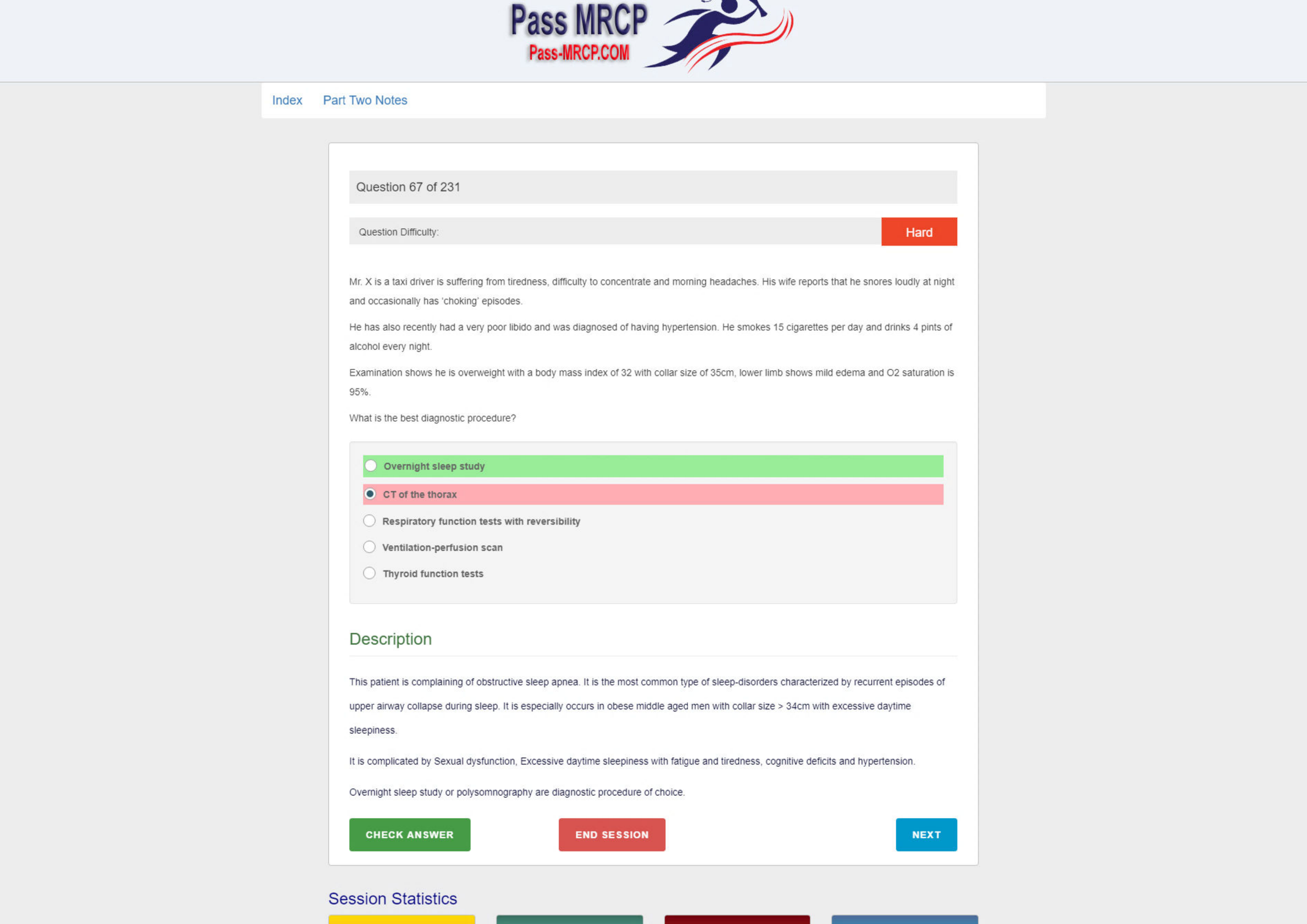
Session Statistics

Answered: 65

✓ **Correct**: 13

× **Incorrect**: 52

Average Score: 20 %



Question 67 of 231

Question Difficulty: Hard

Mr. X is a taxi driver is suffering from tiredness, difficulty to concentrate and morning headaches. His wife reports that he snores loudly at night and occasionally has 'choking' episodes.

He has also recently had a very poor libido and was diagnosed of having hypertension. He smokes 15 cigarettes per day and drinks 4 pints of alcohol every night.

Examination shows he is overweight with a body mass index of 32 with collar size of 35cm, lower limb shows mild edema and O2 saturation is 95%.

What is the best diagnostic procedure?

- ○ **Overnight sleep study**
- ● **CT of the thorax**
- ○ **Respiratory function tests with reversibility**
- ○ **Ventilation-perfusion scan**
- ○ **Thyroid function tests**

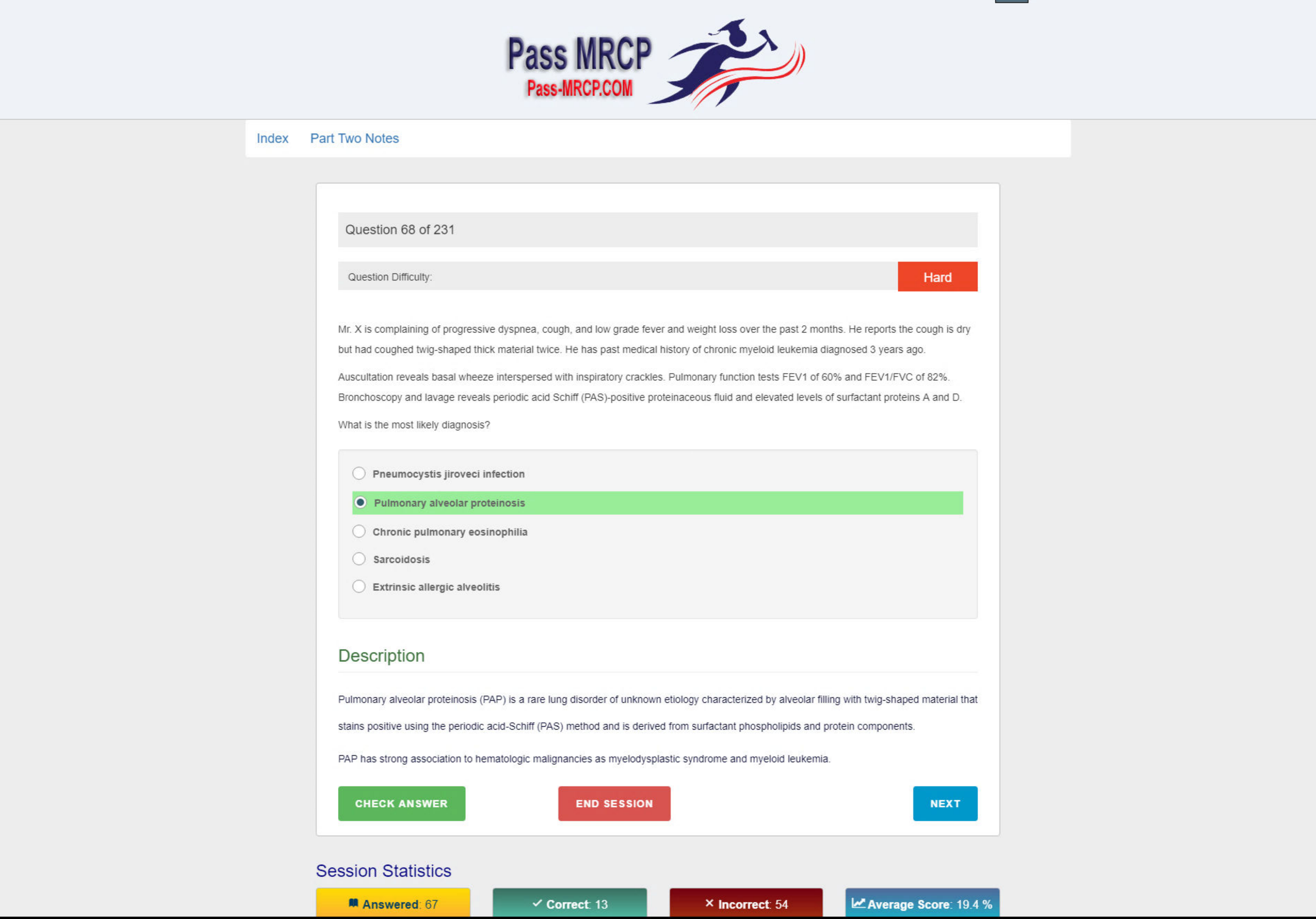
Description

This patient is complaining of obstructive sleep apnea. It is the most common type of sleep-disorders characterized by recurrent episodes of upper airway collapse during sleep. It is especially occurs in obese middle aged men with collar size > 34cm with excessive daytime sleepiness.

It is complicated by Sexual dysfunction, Excessive daytime sleepiness with fatigue and tiredness, cognitive deficits and hypertension.

Overnight sleep study or polysomnography are diagnostic procedure of choice.

Session Statistics



Question 68 of 231

Question Difficulty: Hard

Mr. X is complaining of progressive dyspnea, cough, and low grade fever and weight loss over the past 2 months. He reports the cough is dry but had coughed twig-shaped thick material twice. He has past medical history of chronic myeloid leukemia diagnosed 3 years ago.

Auscultation reveals basal wheeze interspersed with inspiratory crackles. Pulmonary function tests FEV1 of 60% and FEV1/FVC of 82%. Bronchoscopy and lavage reveals periodic acid Schiff (PAS)-positive proteinaceous fluid and elevated levels of surfactant proteins A and D.

What is the most likely diagnosis?

- ○ **Pneumocystis jiroveci infection**
- ● **Pulmonary alveolar proteinosis**
- ○ **Chronic pulmonary eosinophilia**
- ○ **Sarcoidosis**
- ○ **Extrinsic allergic alveolitis**

Description

Pulmonary alveolar proteinosis (PAP) is a rare lung disorder of unknown etiology characterized by alveolar filling with twig-shaped material that stains positive using the periodic acid-Schiff (PAS) method and is derived from surfactant phospholipids and protein components.

PAP has strong association to hematologic malignancies as myelodysplastic syndrome and myeloid leukemia.

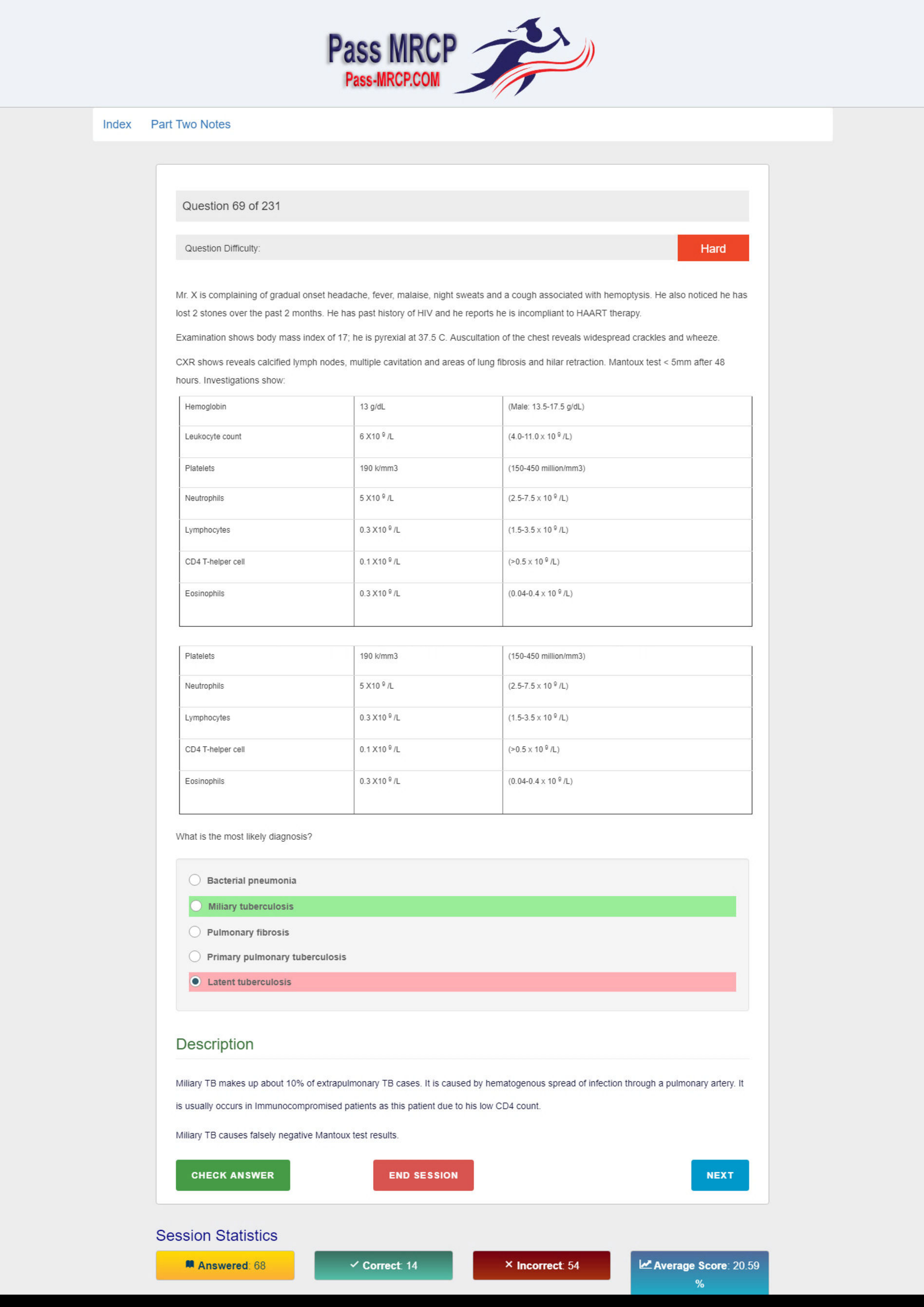
Session Statistics

Answered: 67

✓ **Correct**: 13

× **Incorrect**: 54

Average Score: 19.4 %



Question 69 of 231

Question Difficulty: **Hard**

Mr. X is complaining of gradual onset headache, fever, malaise, night sweats and a cough associated with hemoptysis. He also noticed he has lost 2 stones over the past 2 months. He has past history of HIV and he reports he is incompliant to HAART therapy.

Examination shows body mass index of 17; he is pyrexial at 37.5 C. Auscultation of the chest reveals widespread crackles and wheeze.

CXR shows reveals calcified lymph nodes, multiple cavitation and areas of lung fibrosis and hilar retraction. Mantoux test < 5mm after 48 hours. Investigations show:

Hemoglobin	13 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	6 X10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	190 k/mm3	(150-450 million/mm3)
Neutrophils	5 X10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	0.3 X10^{9} /L	(1.5-3.5 x 10^{9} /L)
CD4 T-helper cell	0.1 X10^{9} /L	(>0.5 x 10^{9} /L)
Eosinophils	0.3 X10^{9} /L	(0.04-0.4 x 10^{9} /L)

Platelets	190 k/mm3	(150-450 million/mm3)
Neutrophils	5 X10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	0.3 X10^{9} /L	(1.5-3.5 x 10^{9} /L)
CD4 T-helper cell	0.1 X10^{9} /L	(>0.5 x 10^{9} /L)
Eosinophils	0.3 X10^{9} /L	(0.04-0.4 x 10^{9} /L)

What is the most likely diagnosis?

○ **Bacterial pneumonia**
○ **Miliary tuberculosis**
○ **Pulmonary fibrosis**
○ **Primary pulmonary tuberculosis**
● **Latent tuberculosis**

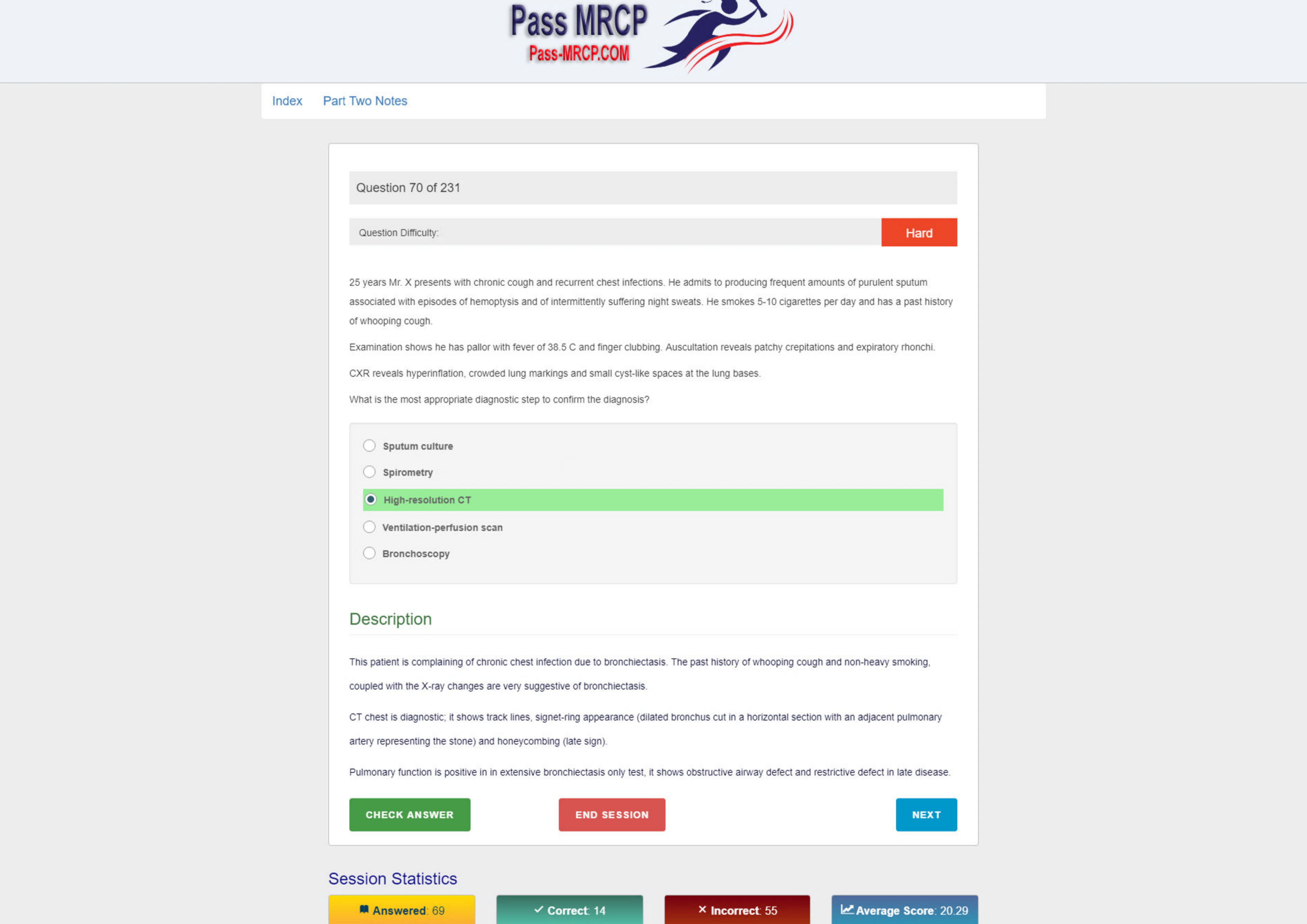
Description

Miliary TB makes up about 10% of extrapulmonary TB cases. It is caused by hematogenous spread of infection through a pulmonary artery. It is usually occurs in Immunocompromised patients as this patient due to his low CD4 count.

Miliary TB causes falsely negative Mantoux test results.

Session Statistics

Answered: 68
✓ **Correct**: 14
✕ **Incorrect**: 54
Average Score: 20.59 %



Question 70 of 231

Question Difficulty: Hard

25 years Mr. X presents with chronic cough and recurrent chest infections. He admits to producing frequent amounts of purulent sputum associated with episodes of hemoptysis and of intermittently suffering night sweats. He smokes 5-10 cigarettes per day and has a past history of whooping cough.

Examination shows he has pallor with fever of 38.5 C and finger clubbing. Auscultation reveals patchy crepitations and expiratory rhonchi.

CXR reveals hyperinflation, crowded lung markings and small cyst-like spaces at the lung bases.

What is the most appropriate diagnostic step to confirm the diagnosis?

- ○ **Sputum culture**
- ○ **Spirometry**
- ● **High-resolution CT**
- ○ **Ventilation-perfusion scan**
- ○ **Bronchoscopy**

Description

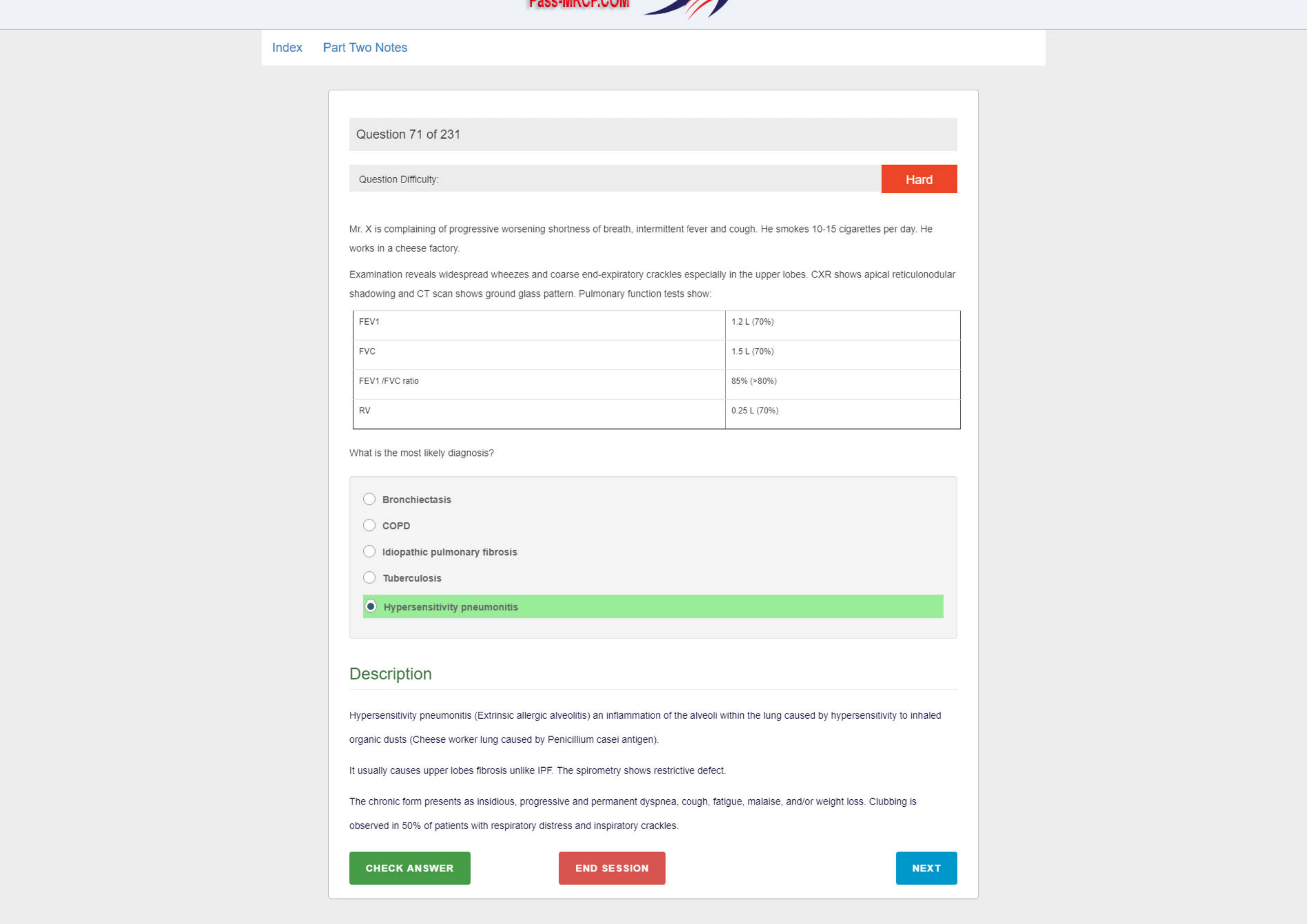
This patient is complaining of chronic chest infection due to bronchiectasis. The past history of whooping cough and non-heavy smoking, coupled with the X-ray changes are very suggestive of bronchiectasis.

CT chest is diagnostic; it shows track lines, signet-ring appearance (dilated bronchus cut in a horizontal section with an adjacent pulmonary artery representing the stone) and honeycombing (late sign).

Pulmonary function is positive in in extensive bronchiectasis only test, it shows obstructive airway defect and restrictive defect in late disease.

Session Statistics

Answered: 69
Correct: 14
Incorrect: 55
Average Score: 20.29



Question 71 of 231

Question Difficulty: Hard

Mr. X is complaining of progressive worsening shortness of breath, intermittent fever and cough. He smokes 10-15 cigarettes per day. He works in a cheese factory.

Examination reveals widespread wheezes and coarse end-expiratory crackles especially in the upper lobes. CXR shows apical reticulonodular shadowing and CT scan shows ground glass pattern. Pulmonary function tests show:

FEV1	1.2 L (70%)
FVC	1.5 L (70%)
FEV1 /FVC ratio	85% (>80%)
RV	0.25 L (70%)

What is the most likely diagnosis?

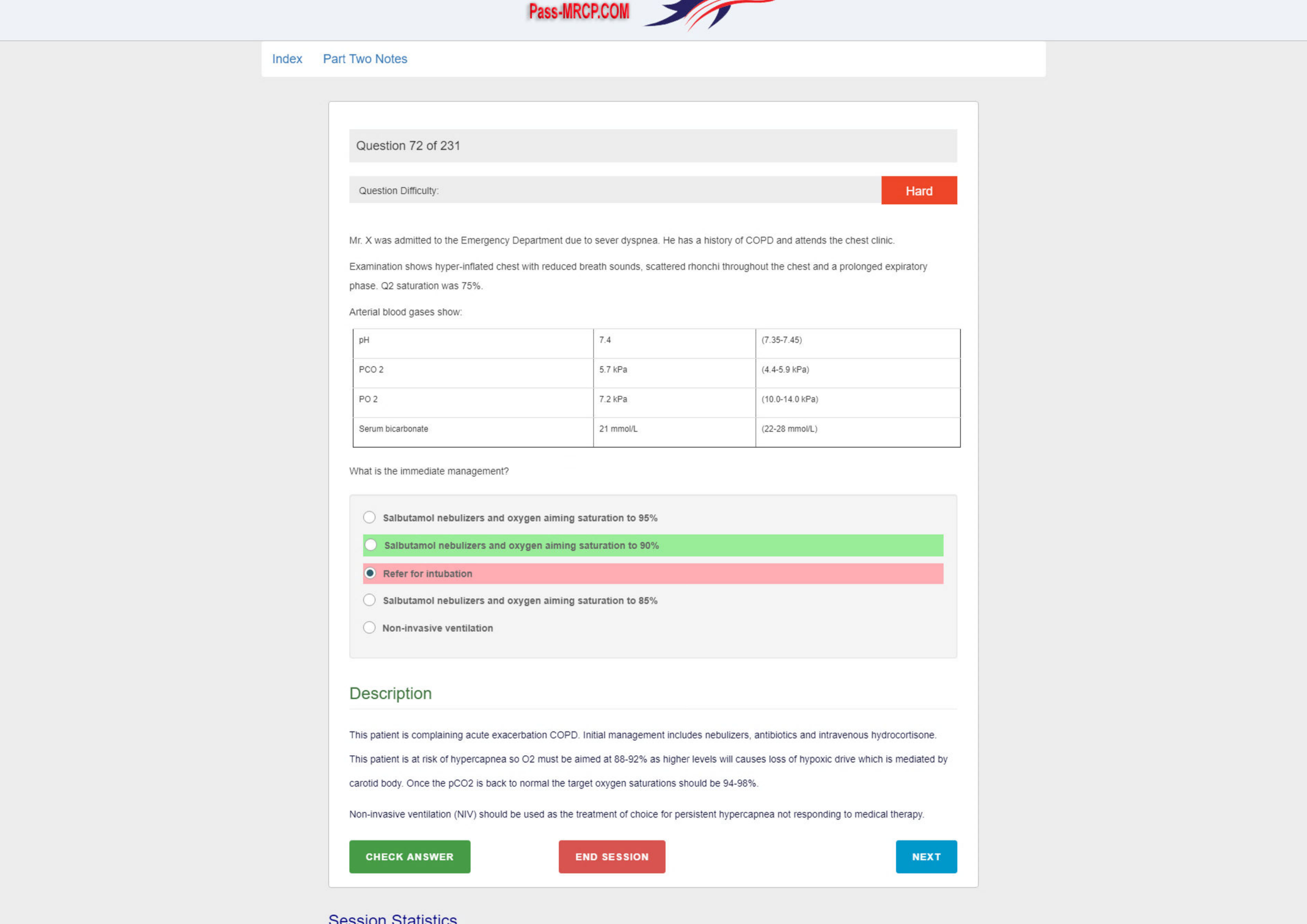
○ **Bronchiectasis**
○ **COPD**
○ **Idiopathic pulmonary fibrosis**
○ **Tuberculosis**
● **Hypersensitivity pneumonitis**

Description

Hypersensitivity pneumonitis (Extrinsic allergic alveolitis) an inflammation of the alveoli within the lung caused by hypersensitivity to inhaled organic dusts (Cheese worker lung caused by Penicillium casei antigen).

It usually causes upper lobes fibrosis unlike IPF. The spirometry shows restrictive defect.

The chronic form presents as insidious, progressive and permanent dyspnea, cough, fatigue, malaise, and/or weight loss. Clubbing is observed in 50% of patients with respiratory distress and inspiratory crackles.



Question 72 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the Emergency Department due to sever dyspnea. He has a history of COPD and attends the chest clinic.

Examination shows hyper-inflated chest with reduced breath sounds, scattered rhonchi throughout the chest and a prolonged expiratory phase. Q2 saturation was 75%.

Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	5.7 kPa	(4.4-5.9 kPa)
PO 2	7.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	21 mmol/L	(22-28 mmol/L)

What is the immediate management?

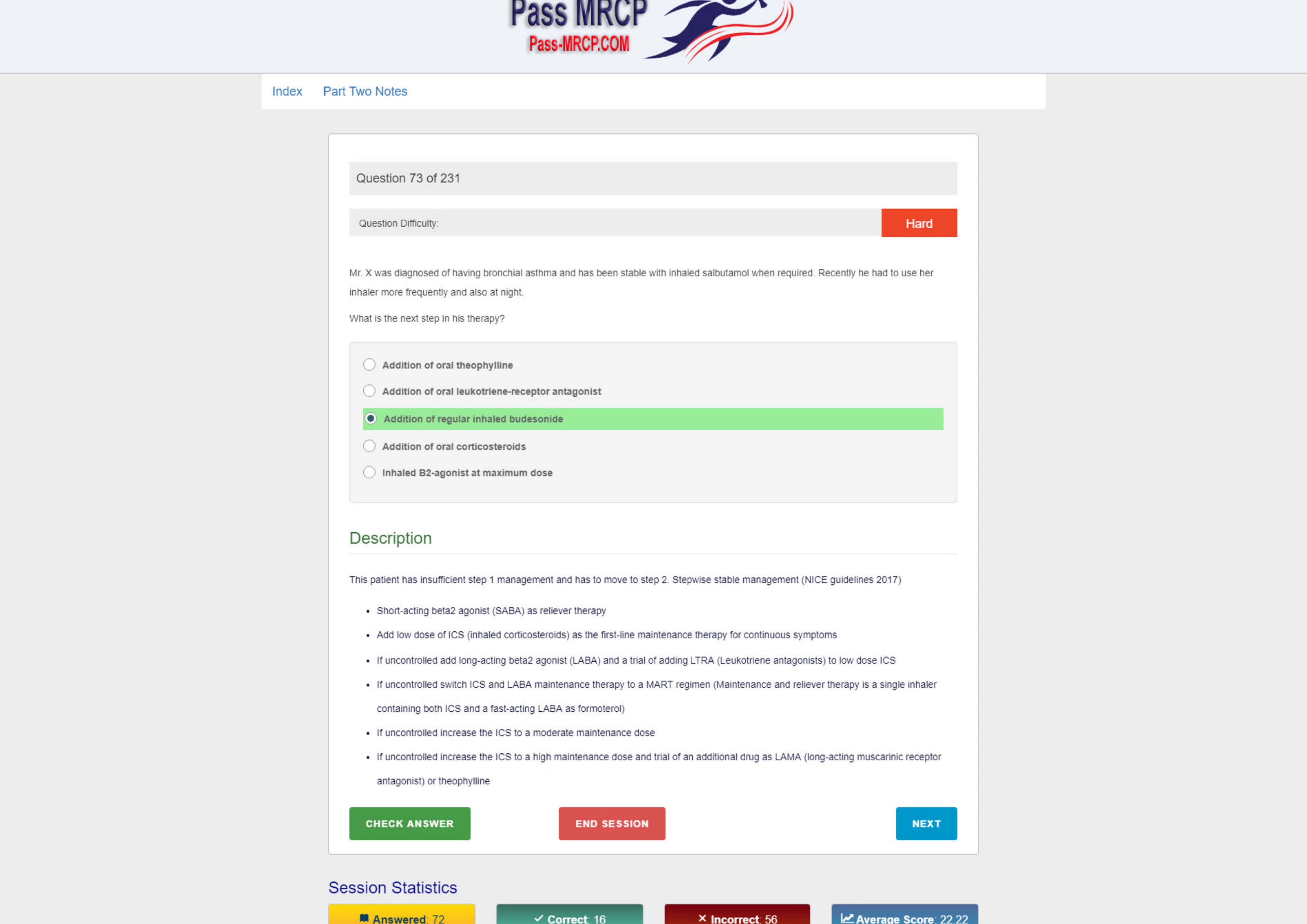
- ○ **Salbutamol nebulizers and oxygen aiming saturation to 95%**
- ○ **Salbutamol nebulizers and oxygen aiming saturation to 90%**
- ● **Refer for intubation**
- ○ **Salbutamol nebulizers and oxygen aiming saturation to 85%**
- ○ **Non-invasive ventilation**

Description

This patient is complaining acute exacerbation COPD. Initial management includes nebulizers, antibiotics and intravenous hydrocortisone.

This patient is at risk of hypercapnea so O2 must be aimed at 88-92% as higher levels will causes loss of hypoxic drive which is mediated by carotid body. Once the pCO2 is back to normal the target oxygen saturations should be 94-98%.

Non-invasive ventilation (NIV) should be used as the treatment of choice for persistent hypercapnea not responding to medical therapy.



Question 73 of 231

Question Difficulty: Hard

Mr. X was diagnosed of having bronchial asthma and has been stable with inhaled salbutamol when required. Recently he had to use her inhaler more frequently and also at night.

What is the next step in his therapy?

○ Addition of oral theophylline

○ Addition of oral leukotriene-receptor antagonist

● Addition of regular inhaled budesonide

○ Addition of oral corticosteroids

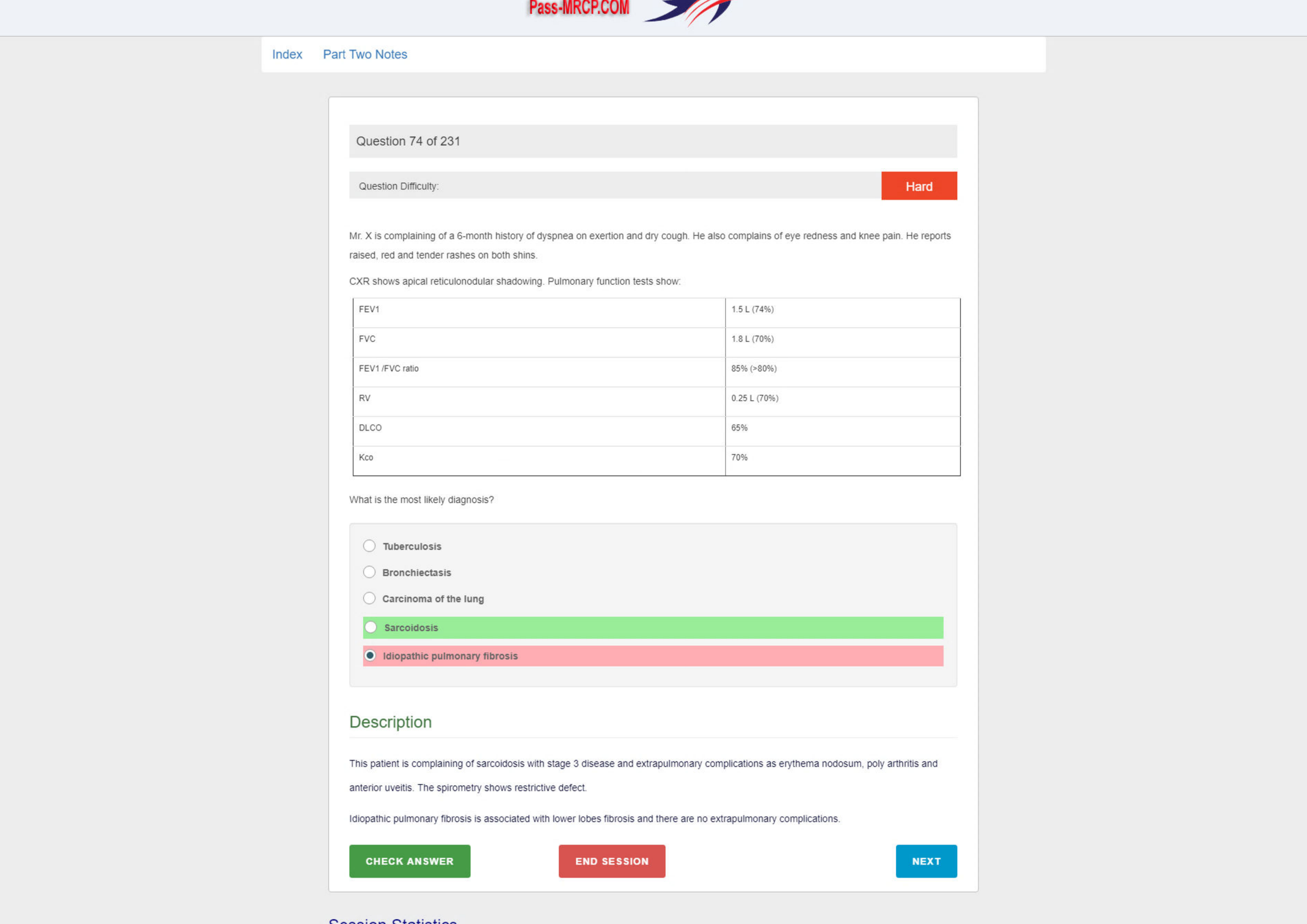
○ Inhaled B2-agonist at maximum dose

Description

This patient has insufficient step 1 management and has to move to step 2. Stepwise stable management (NICE guidelines 2017)

- Short-acting beta2 agonist (SABA) as reliever therapy
- Add low dose of ICS (inhaled corticosteroids) as the first-line maintenance therapy for continuous symptoms
- If uncontrolled add long-acting beta2 agonist (LABA) and a trial of adding LTRA (Leukotriene antagonists) to low dose ICS
- If uncontrolled switch ICS and LABA maintenance therapy to a MART regimen (Maintenance and reliever therapy is a single inhaler containing both ICS and a fast-acting LABA as formoterol)
- If uncontrolled increase the ICS to a moderate maintenance dose
- If uncontrolled increase the ICS to a high maintenance dose and trial of an additional drug as LAMA (long-acting muscarinic receptor antagonist) or theophylline

Session Statistics



Question 74 of 231

Question Difficulty: Hard

Mr. X is complaining of a 6-month history of dyspnea on exertion and dry cough. He also complains of eye redness and knee pain. He reports raised, red and tender rashes on both shins.

CXR shows apical reticulonodular shadowing. Pulmonary function tests show:

FEV1	1.5 L (74%)
FVC	1.8 L (70%)
FEV1 /FVC ratio	85% (>80%)
RV	0.25 L (70%)
DLCO	65%
Kco	70%

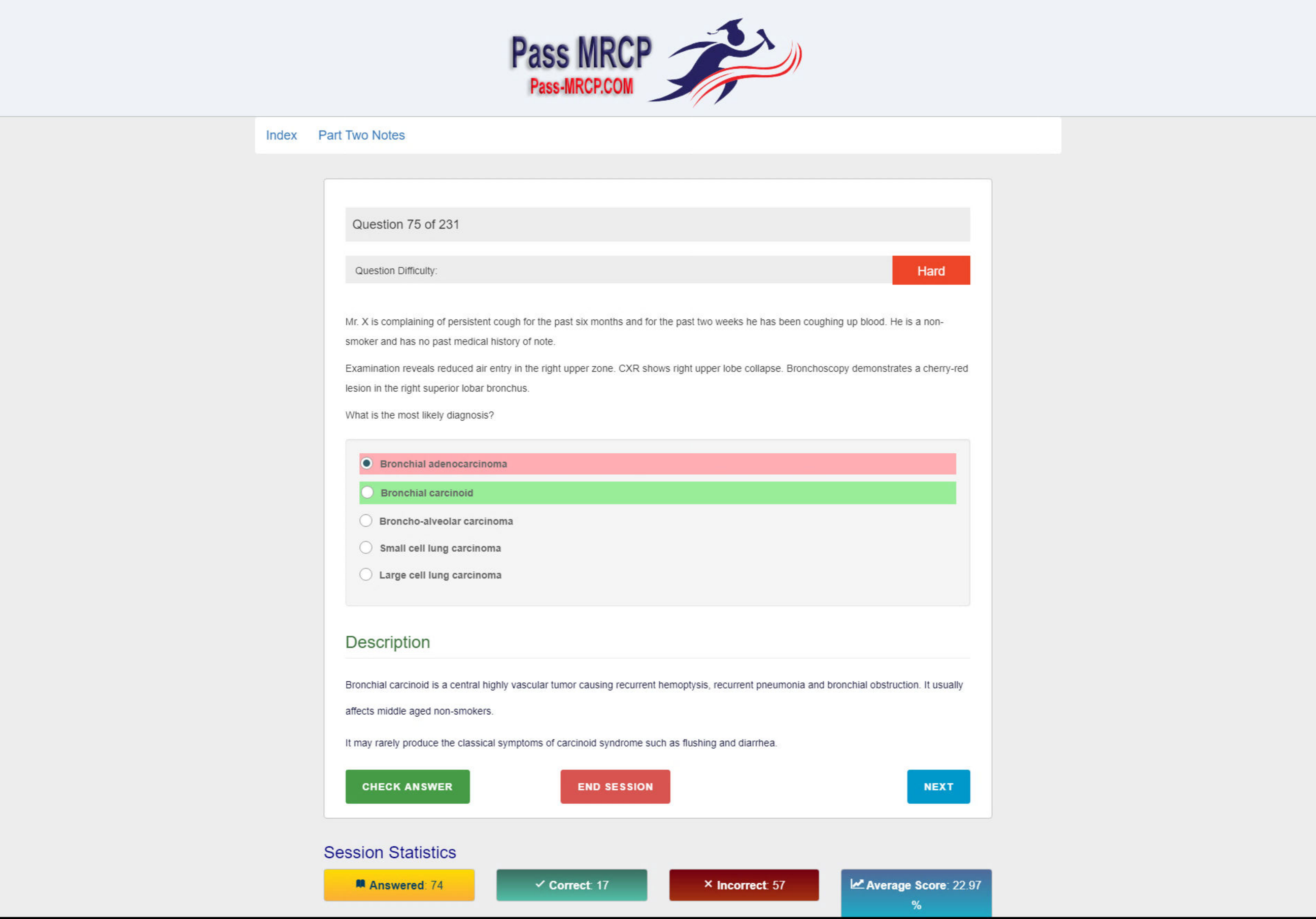
What is the most likely diagnosis?

- ○ **Tuberculosis**
- ○ **Bronchiectasis**
- ○ **Carcinoma of the lung**
- ○ **Sarcoidosis**
- ● **Idiopathic pulmonary fibrosis**

Description

This patient is complaining of sarcoidosis with stage 3 disease and extrapulmonary complications as erythema nodosum, poly arthritis and anterior uveitis. The spirometry shows restrictive defect.

Idiopathic pulmonary fibrosis is associated with lower lobes fibrosis and there are no extrapulmonary complications.



Question 75 of 231

Question Difficulty: **Hard**

Mr. X is complaining of persistent cough for the past six months and for the past two weeks he has been coughing up blood. He is a non-smoker and has no past medical history of note.

Examination reveals reduced air entry in the right upper zone. CXR shows right upper lobe collapse. Bronchoscopy demonstrates a cherry-red lesion in the right superior lobar bronchus.

What is the most likely diagnosis?

- ● **Bronchial adenocarcinoma**
- ○ **Bronchial carcinoid**
- ○ **Broncho-alveolar carcinoma**
- ○ **Small cell lung carcinoma**
- ○ **Large cell lung carcinoma**

Description

Bronchial carcinoid is a central highly vascular tumor causing recurrent hemoptysis, recurrent pneumonia and bronchial obstruction. It usually affects middle aged non-smokers.

It may rarely produce the classical symptoms of carcinoid syndrome such as flushing and diarrhea.

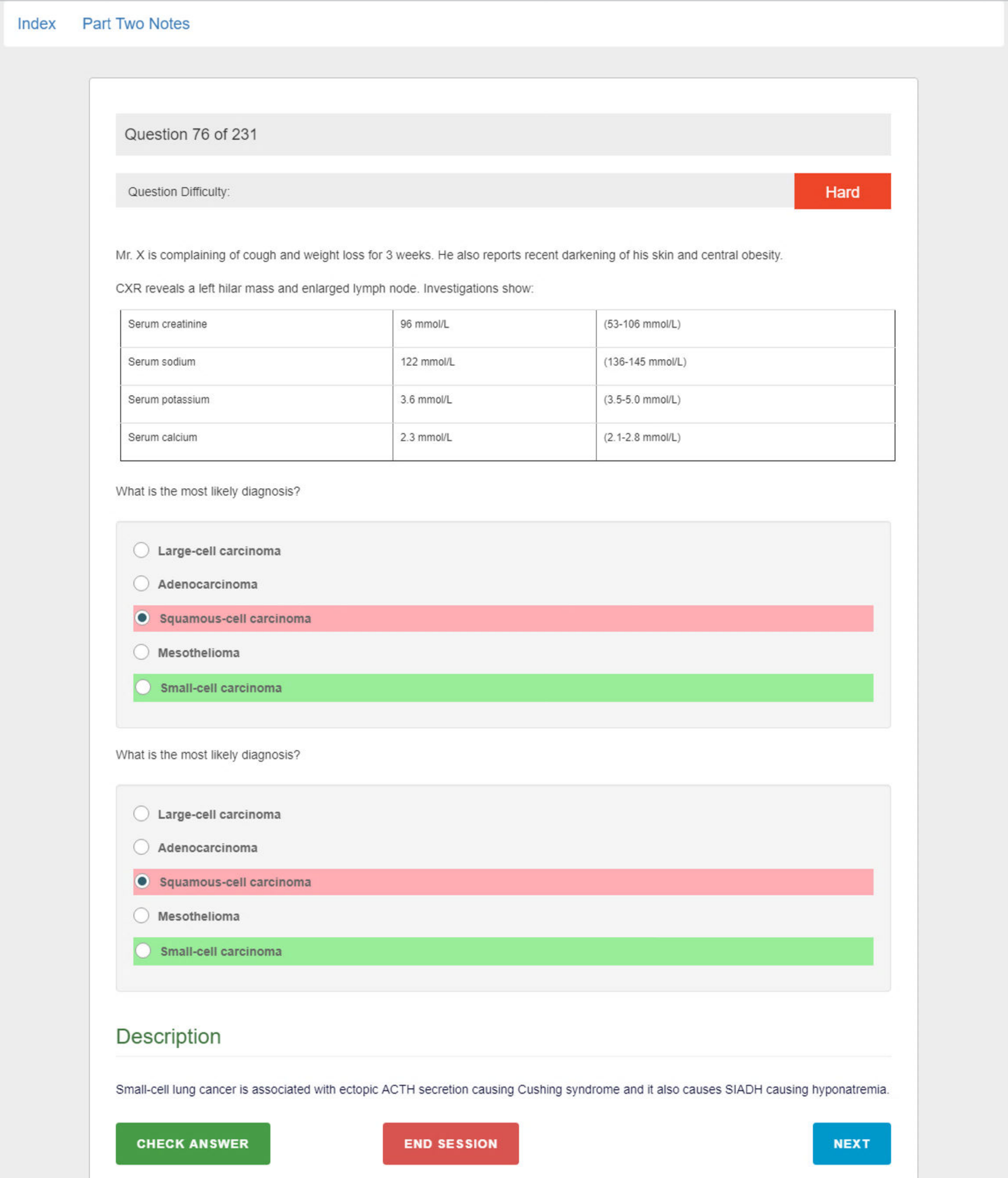
Session Statistics

Answered: 74

✓ **Correct**: 17

× **Incorrect**: 57

Average Score: 22.97 %



Question 76 of 231

Question Difficulty: **Hard**

Mr. X is complaining of cough and weight loss for 3 weeks. He also reports recent darkening of his skin and central obesity.

CXR reveals a left hilar mass and enlarged lymph node. Investigations show:

Serum creatinine	96 mmol/L	(53-106 mmol/L)
Serum sodium	122 mmol/L	(136-145 mmol/L)
Serum potassium	3.6 mmol/L	(3.5-5.0 mmol/L)
Serum calcium	2.3 mmol/L	(2.1-2.8 mmol/L)

What is the most likely diagnosis?

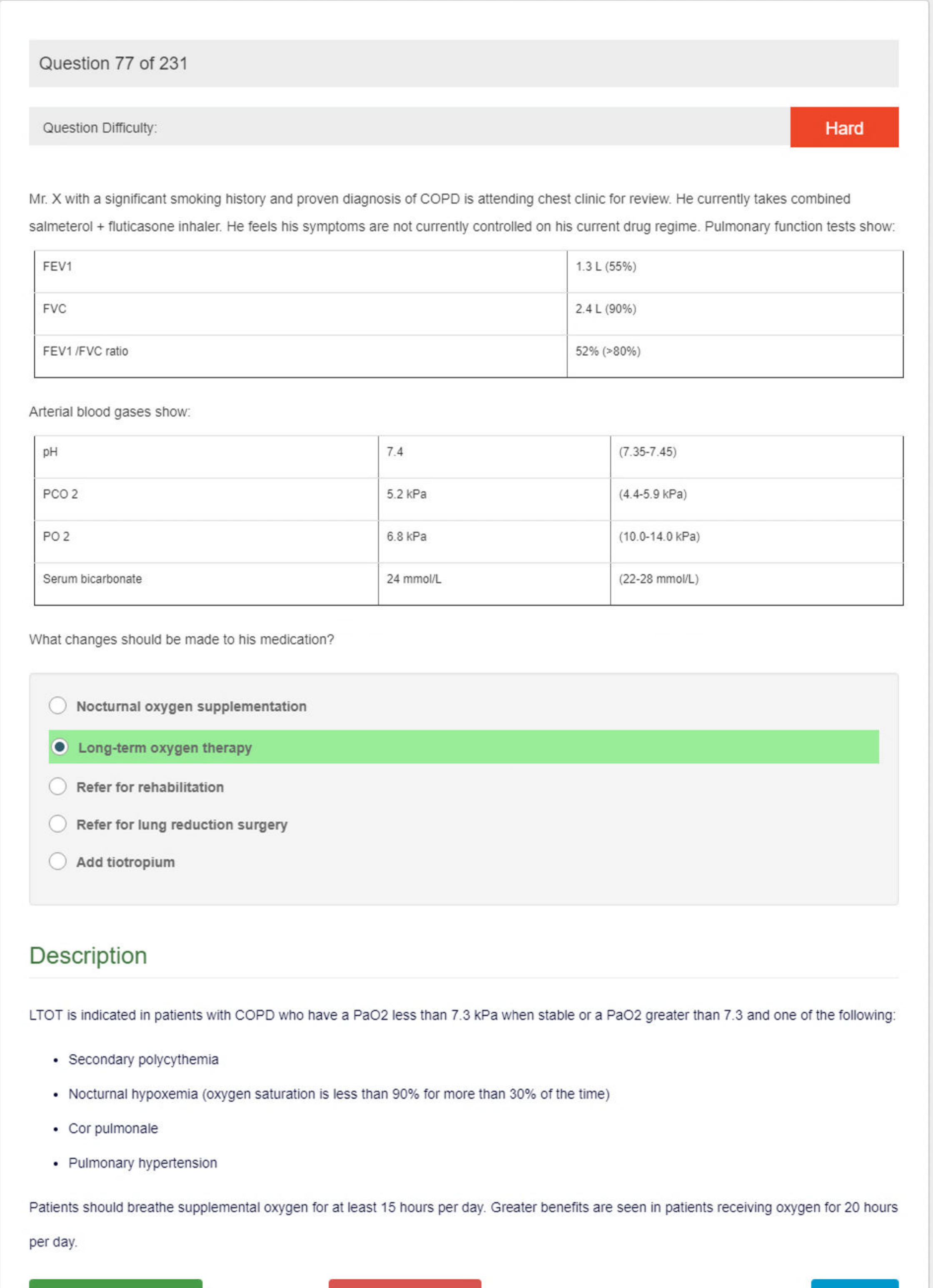
- ○ **Large-cell carcinoma**
- ○ **Adenocarcinoma**
- ● **Squamous-cell carcinoma**
- ○ **Mesothelioma**
- ○ **Small-cell carcinoma**

What is the most likely diagnosis?

- ○ **Large-cell carcinoma**
- ○ **Adenocarcinoma**
- ● **Squamous-cell carcinoma**
- ○ **Mesothelioma**
- ○ **Small-cell carcinoma**

Description

Small-cell lung cancer is associated with ectopic ACTH secretion causing Cushing syndrome and it also causes SIADH causing hyponatremia.



Question 77 of 231

Mr. X with a significant smoking history and proven diagnosis of COPD is attending chest clinic for review. He currently takes combined salmeterol + fluticasone inhaler. He feels his symptoms are not currently controlled on his current drug regime. Pulmonary function tests show:

FEV1	1.3 L (55%)
FVC	2.4 L (90%)
FEV1 /FVC ratio	52% (>80%)

Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	5.2 kPa	(4.4-5.9 kPa)
PO 2	6.8 kPa	(10.0-14.0 kPa)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

What changes should be made to his medication?

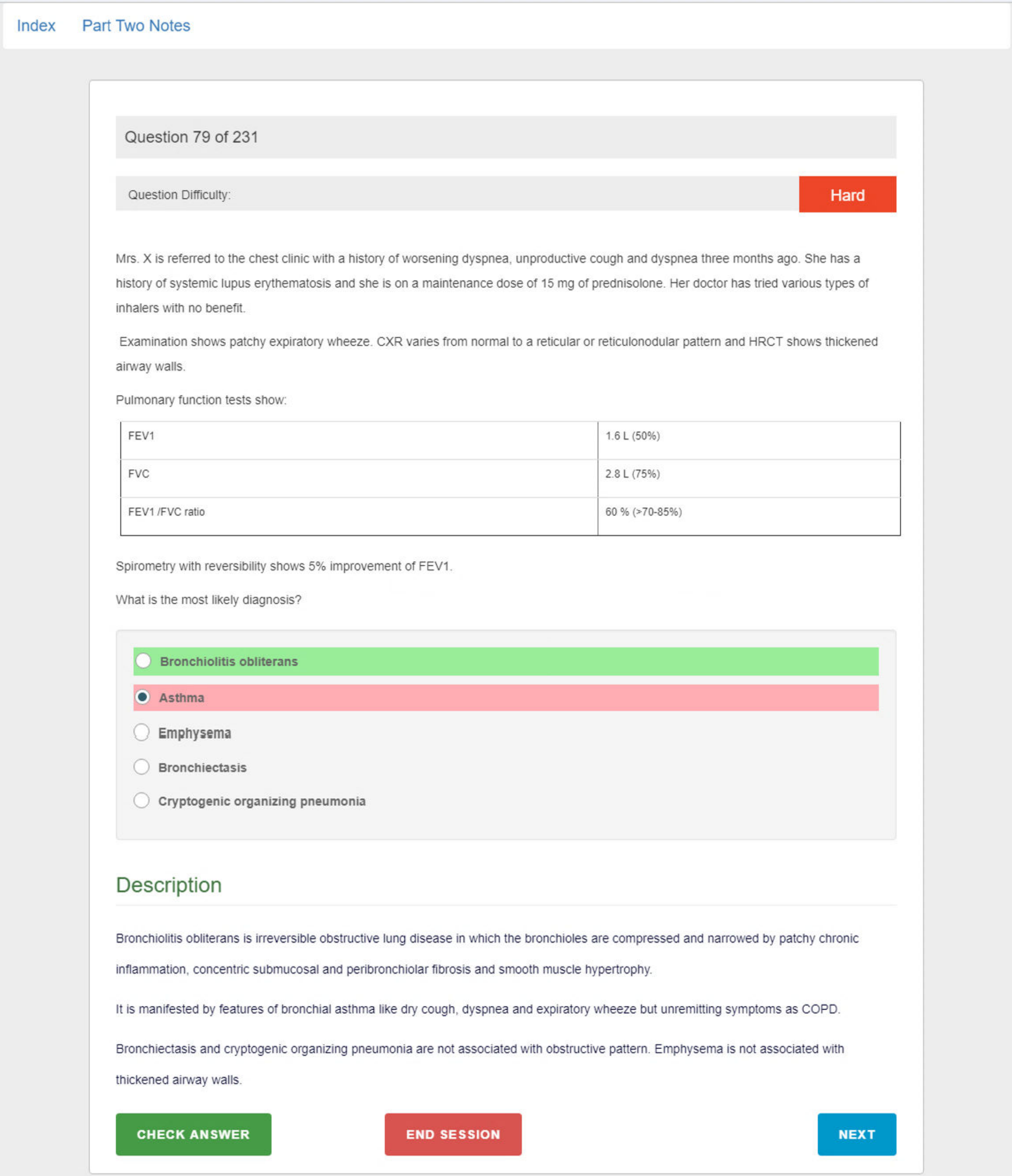
- ○ **Nocturnal oxygen supplementation**
- ● **Long-term oxygen therapy**
- ○ **Refer for rehabilitation**
- ○ **Refer for lung reduction surgery**
- ○ **Add tiotropium**

Description

LTOT is indicated in patients with COPD who have a PaO2 less than 7.3 kPa when stable or a PaO2 greater than 7.3 and one of the following:

- Secondary polycythemia
- Nocturnal hypoxemia (oxygen saturation is less than 90% for more than 30% of the time)
- Cor pulmonale
- Pulmonary hypertension

Patients should breathe supplemental oxygen for at least 15 hours per day. Greater benefits are seen in patients receiving oxygen for 20 hours per day.



Question 79 of 231

Question Difficulty: **Hard**

Mrs. X is referred to the chest clinic with a history of worsening dyspnea, unproductive cough and dyspnea three months ago. She has a history of systemic lupus erythematosis and she is on a maintenance dose of 15 mg of prednisolone. Her doctor has tried various types of inhalers with no benefit.

Examination shows patchy expiratory wheeze. CXR varies from normal to a reticular or reticulonodular pattern and HRCT shows thickened airway walls.

Pulmonary function tests show:

FEV1	1.6 L (50%)
FVC	2.8 L (75%)
FEV1 /FVC ratio	60 % (>70-85%)

Spirometry with reversibility shows 5% improvement of FEV1.

What is the most likely diagnosis?

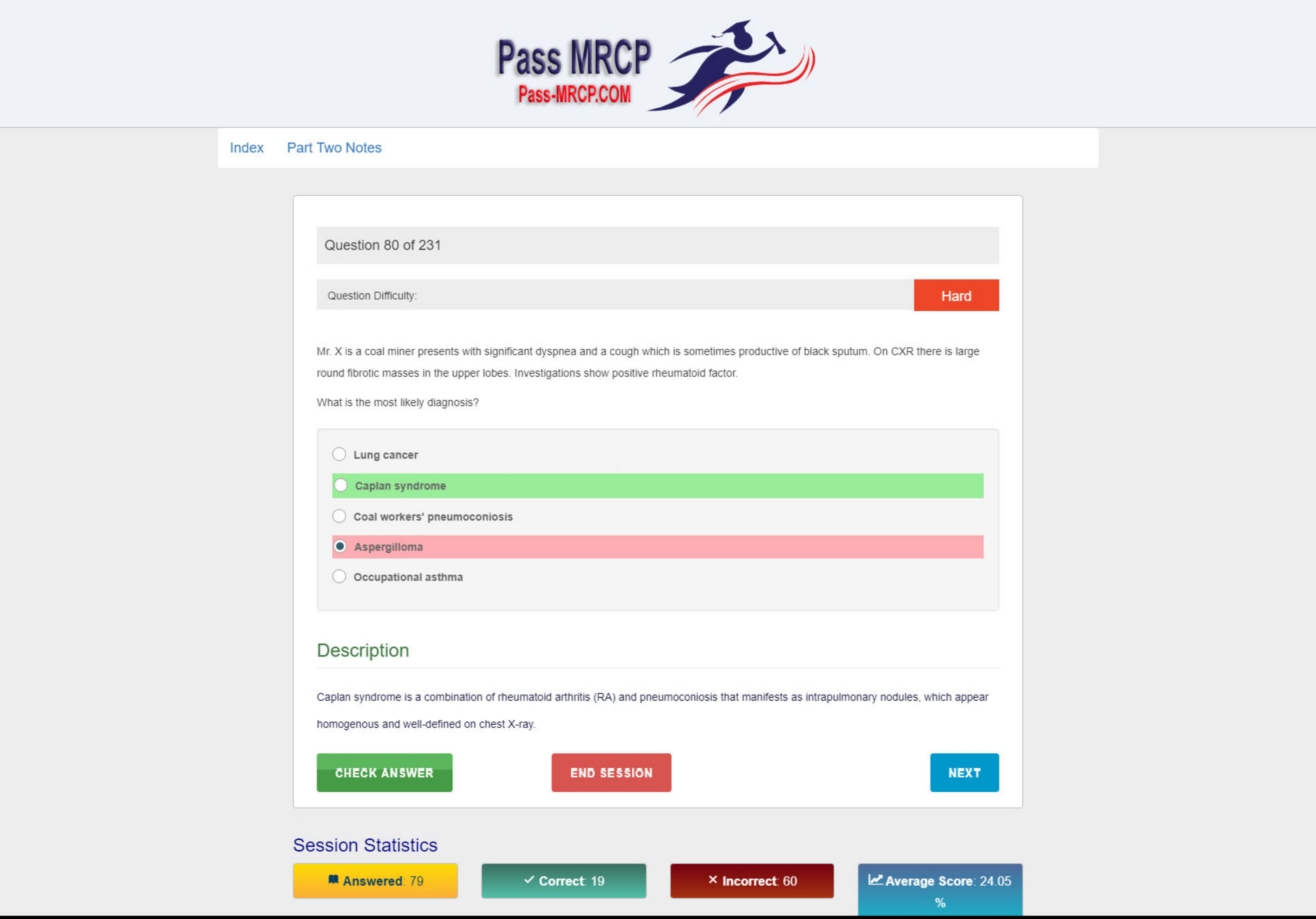
- ○ **Bronchiolitis obliterans**
- ● **Asthma**
- ○ **Emphysema**
- ○ **Bronchiectasis**
- ○ **Cryptogenic organizing pneumonia**

Description

Bronchiolitis obliterans is irreversible obstructive lung disease in which the bronchioles are compressed and narrowed by patchy chronic inflammation, concentric submucosal and peribronchiolar fibrosis and smooth muscle hypertrophy.

It is manifested by features of bronchial asthma like dry cough, dyspnea and expiratory wheeze but unremitting symptoms as COPD.

Bronchiectasis and cryptogenic organizing pneumonia are not associated with obstructive pattern. Emphysema is not associated with thickened airway walls.



Question 80 of 231

Question Difficulty: Hard

Mr. X is a coal miner presents with significant dyspnea and a cough which is sometimes productive of black sputum. On CXR there is large round fibrotic masses in the upper lobes. Investigations show positive rheumatoid factor.

What is the most likely diagnosis?

- ○ Lung cancer
- ○ Caplan syndrome
- ○ Coal workers' pneumoconiosis
- ● Aspergilloma
- ○ Occupational asthma

Description

Caplan syndrome is a combination of rheumatoid arthritis (RA) and pneumoconiosis that manifests as intrapulmonary nodules, which appear homogenous and well-defined on chest X-ray.

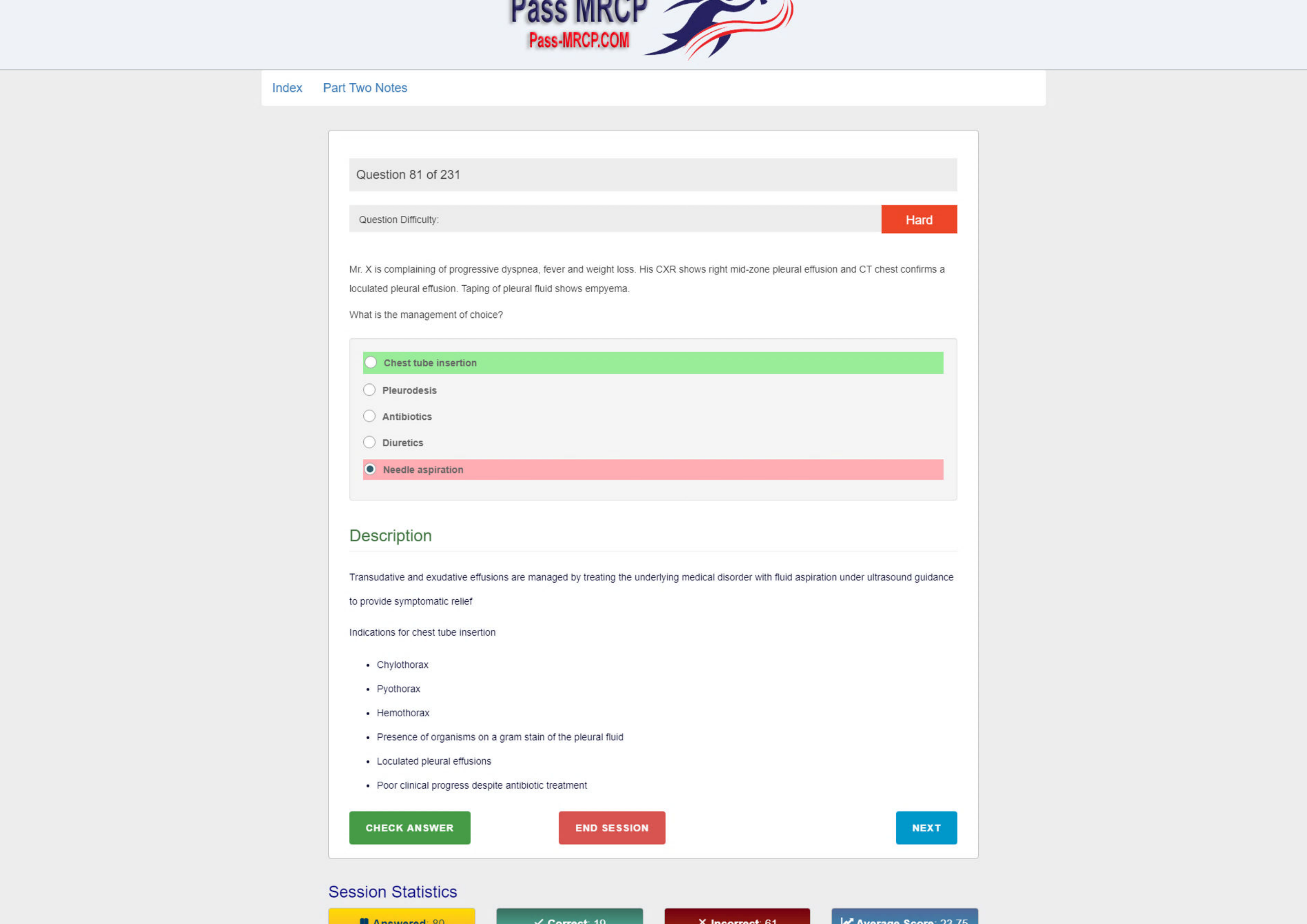
Session Statistics

Answered: 79

✓ Correct: 19

✕ Incorrect: 60

Average Score: 24.05 %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Index
Part Two Notes

Question 81 of 231

Question Difficulty: Hard

Mr. X is complaining of progressive dyspnea, fever and weight loss. His CXR shows right mid-zone pleural effusion and CT chest confirms a loculated pleural effusion. Taping of pleural fluid shows empyema.

What is the management of choice?

○ **Chest tube insertion**
○ **Pleurodesis**
○ **Antibiotics**
○ **Diuretics**
● **Needle aspiration**

Description

Transudative and exudative effusions are managed by treating the underlying medical disorder with fluid aspiration under ultrasound guidance to provide symptomatic relief

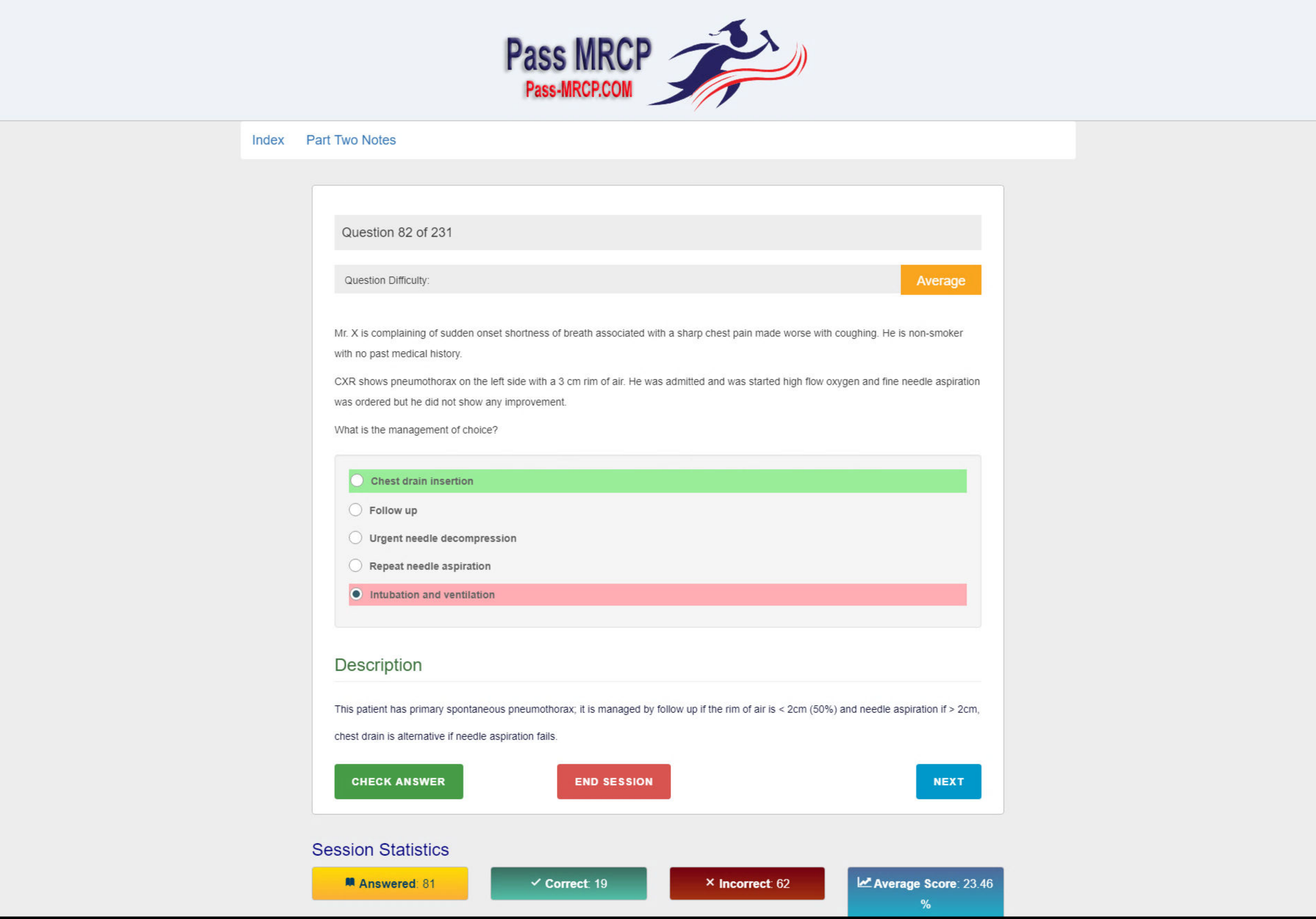
Indications for chest tube insertion

- Chylothorax
- Pyothorax
- Hemothorax
- Presence of organisms on a gram stain of the pleural fluid
- Loculated pleural effusions
- Poor clinical progress despite antibiotic treatment

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 80
✓ Correct: 19
✕ Incorrect: 61
Average Score: 23.75



Question 82 of 231

Question Difficulty: Average

Mr. X is complaining of sudden onset shortness of breath associated with a sharp chest pain made worse with coughing. He is non-smoker with no past medical history.

CXR shows pneumothorax on the left side with a 3 cm rim of air. He was admitted and was started high flow oxygen and fine needle aspiration was ordered but he did not show any improvement.

What is the management of choice?

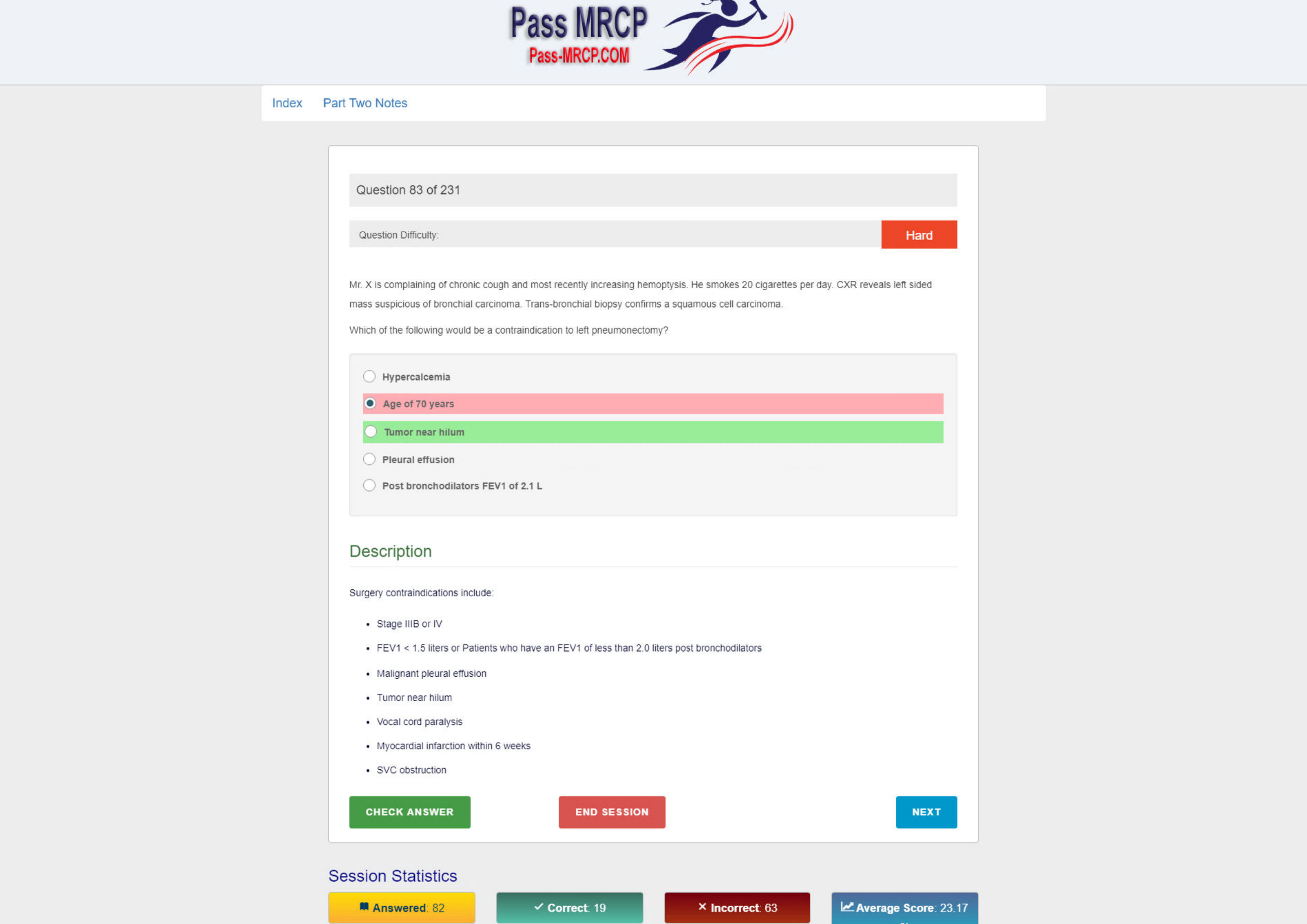
- ○ **Chest drain insertion**
- ○ **Follow up**
- ○ **Urgent needle decompression**
- ○ **Repeat needle aspiration**
- ● **Intubation and ventilation**

Description

This patient has primary spontaneous pneumothorax; it is managed by follow up if the rim of air is < 2cm (50%) and needle aspiration if > 2cm, chest drain is alternative if needle aspiration fails.

Session Statistics

Answered: 81
✓ **Correct**: 19
× **Incorrect**: 62
Average Score: 23.46 %



Question 83 of 231

Question Difficulty: Hard

Mr. X is complaining of chronic cough and most recently increasing hemoptysis. He smokes 20 cigarettes per day. CXR reveals left sided mass suspicious of bronchial carcinoma. Trans-bronchial biopsy confirms a squamous cell carcinoma.

Which of the following would be a contraindication to left pneumonectomy?

○ **Hypercalcemia**
● **Age of 70 years**
○ **Tumor near hilum**
○ **Pleural effusion**
○ **Post bronchodilators FEV1 of 2.1 L**

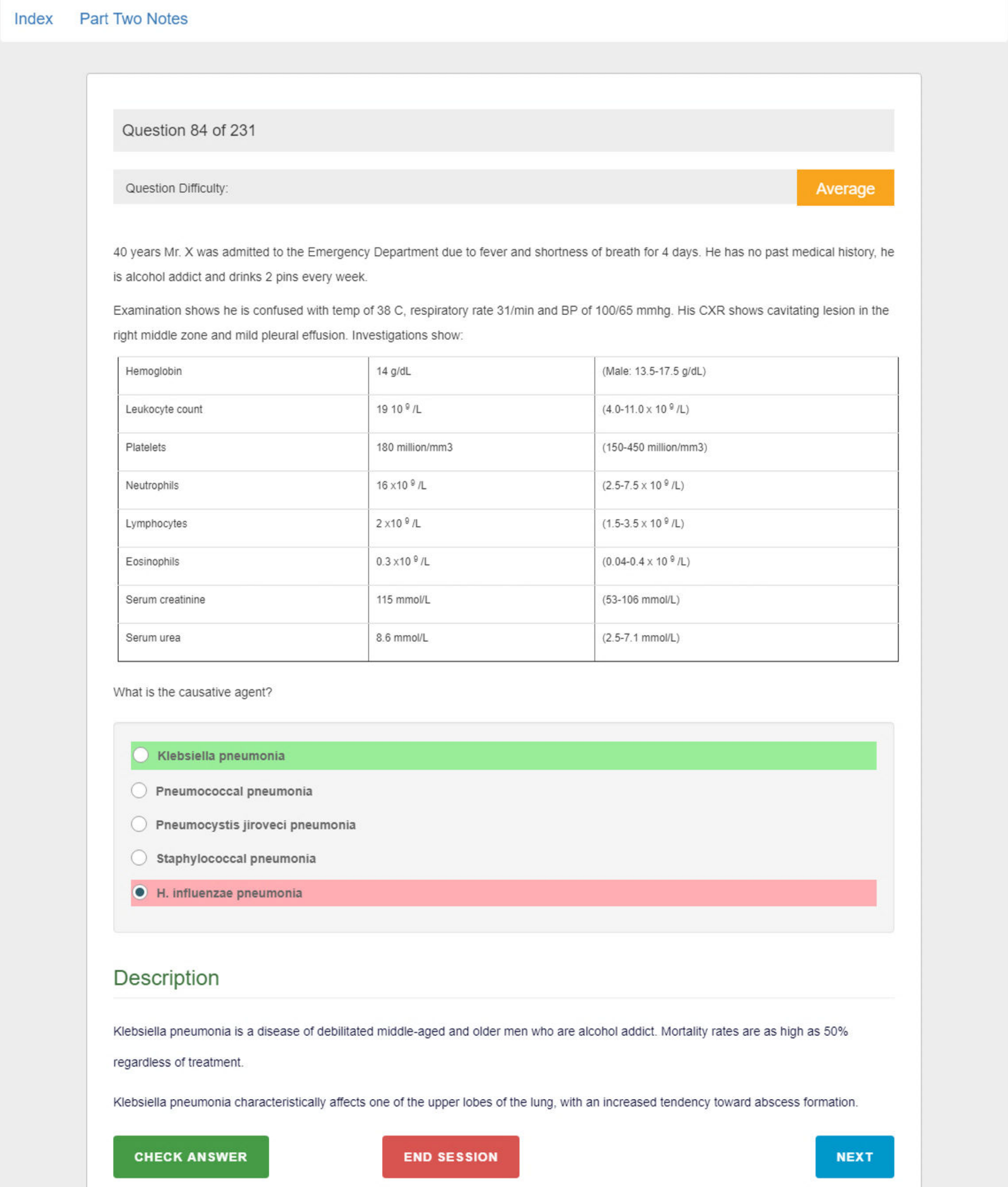
Description

Surgery contraindications include:

- Stage IIIB or IV
- FEV1 < 1.5 liters or Patients who have an FEV1 of less than 2.0 liters post bronchodilators
- Malignant pleural effusion
- Tumor near hilum
- Vocal cord paralysis
- Myocardial infarction within 6 weeks
- SVC obstruction

Session Statistics

Answered: 82
✓ **Correct**: 19
× **Incorrect**: 63
Average Score: 23.17



Question 84 of 231

Question Difficulty: Average

40 years Mr. X was admitted to the Emergency Department due to fever and shortness of breath for 4 days. He has no past medical history, he is alcohol addict and drinks 2 pins every week.

Examination shows he is confused with temp of 38 C, respiratory rate 31/min and BP of 100/65 mmhg. His CXR shows cavitating lesion in the right middle zone and mild pleural effusion. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	2 x10^{9} /L	(1.5-3.5 x 10^{9} /L)
Eosinophils	0.3 x10^{9} /L	(0.04-0.4 x 10^{9} /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	8.6 mmol/L	(2.5-7.1 mmol/L)

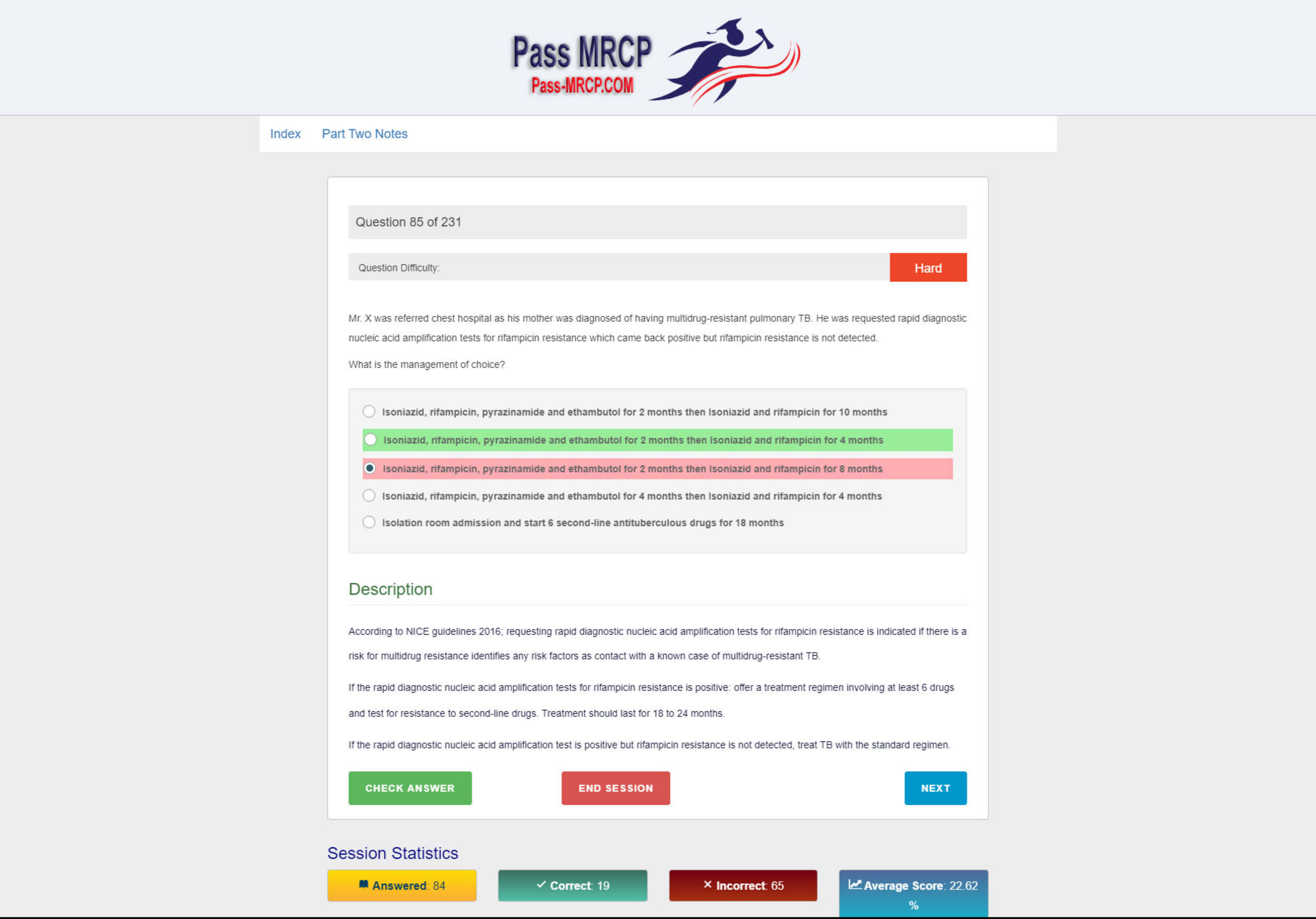
What is the causative agent?

- ○ **Klebsiella pneumonia**
- ○ **Pneumococcal pneumonia**
- ○ **Pneumocystis jiroveci pneumonia**
- ○ **Staphylococcal pneumonia**
- ● **H. influenzae pneumonia**

Description

Klebsiella pneumonia is a disease of debilitated middle-aged and older men who are alcohol addict. Mortality rates are as high as 50% regardless of treatment.

Klebsiella pneumonia characteristically affects one of the upper lobes of the lung, with an increased tendency toward abscess formation.



Question 85 of 231

Question Difficulty: **Hard**

Mr. X was referred chest hospital as his mother was diagnosed of having multidrug-resistant pulmonary TB. He was requested rapid diagnostic nucleic acid amplification tests for rifampicin resistance which came back positive but rifampicin resistance is not detected.

What is the management of choice?

- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 10 months**
- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 4 months**
- ● **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 8 months**
- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 4 months then Isoniazid and rifampicin for 4 months**
- ○ **Isolation room admission and start 6 second-line antituberculous drugs for 18 months**

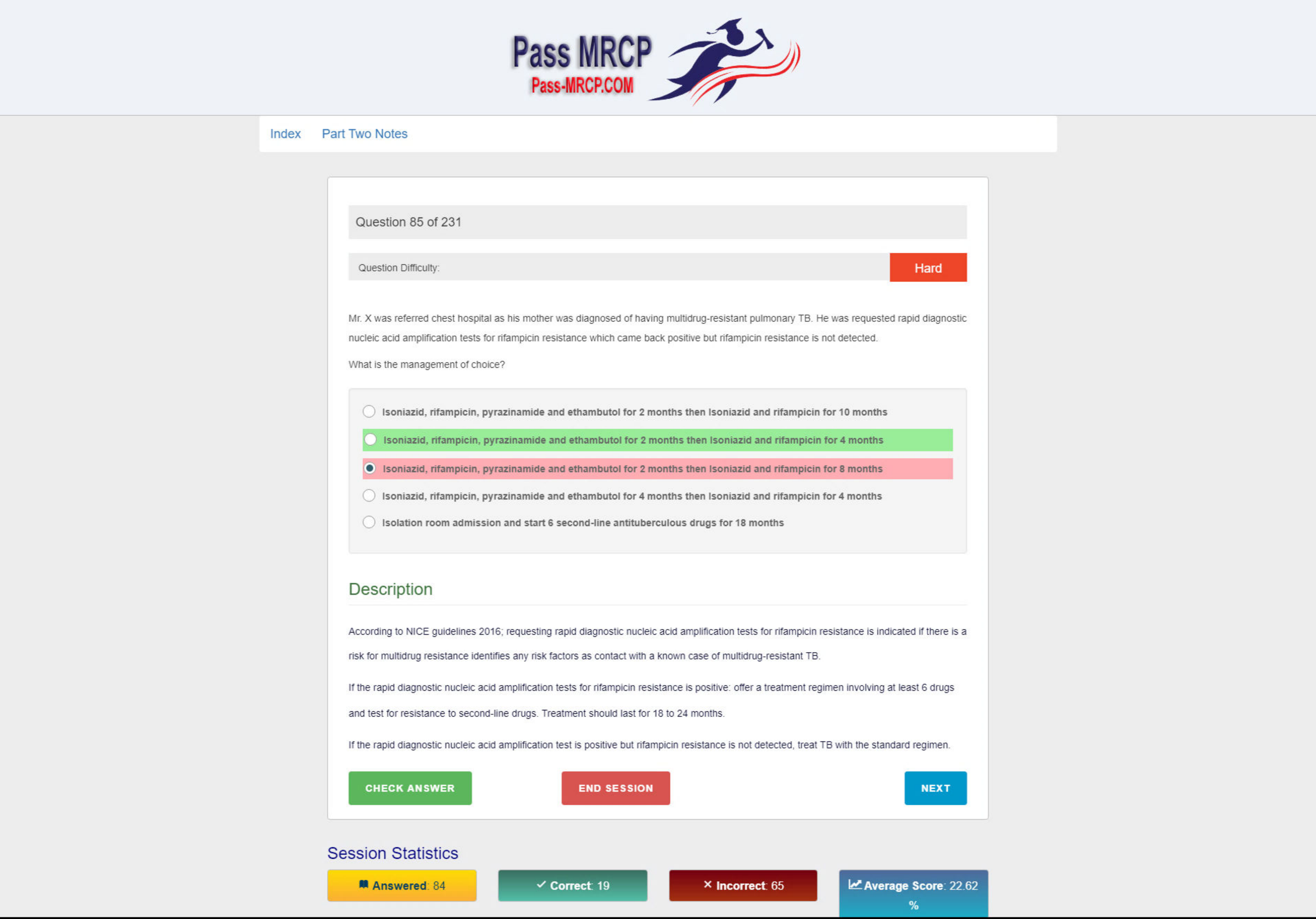
Description

According to NICE guidelines 2016; requesting rapid diagnostic nucleic acid amplification tests for rifampicin resistance is indicated if there is a risk for multidrug resistance identifies any risk factors as contact with a known case of multidrug-resistant TB.

If the rapid diagnostic nucleic acid amplification tests for rifampicin resistance is positive: offer a treatment regimen involving at least 6 drugs and test for resistance to second-line drugs. Treatment should last for 18 to 24 months.

If the rapid diagnostic nucleic acid amplification test is positive but rifampicin resistance is not detected, treat TB with the standard regimen.

Session Statistics



Question 85 of 231

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- ● **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 8 months**
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- ○ **Isolation room admission and start 6 second-line antituberculous drugs for 18 months**

Description

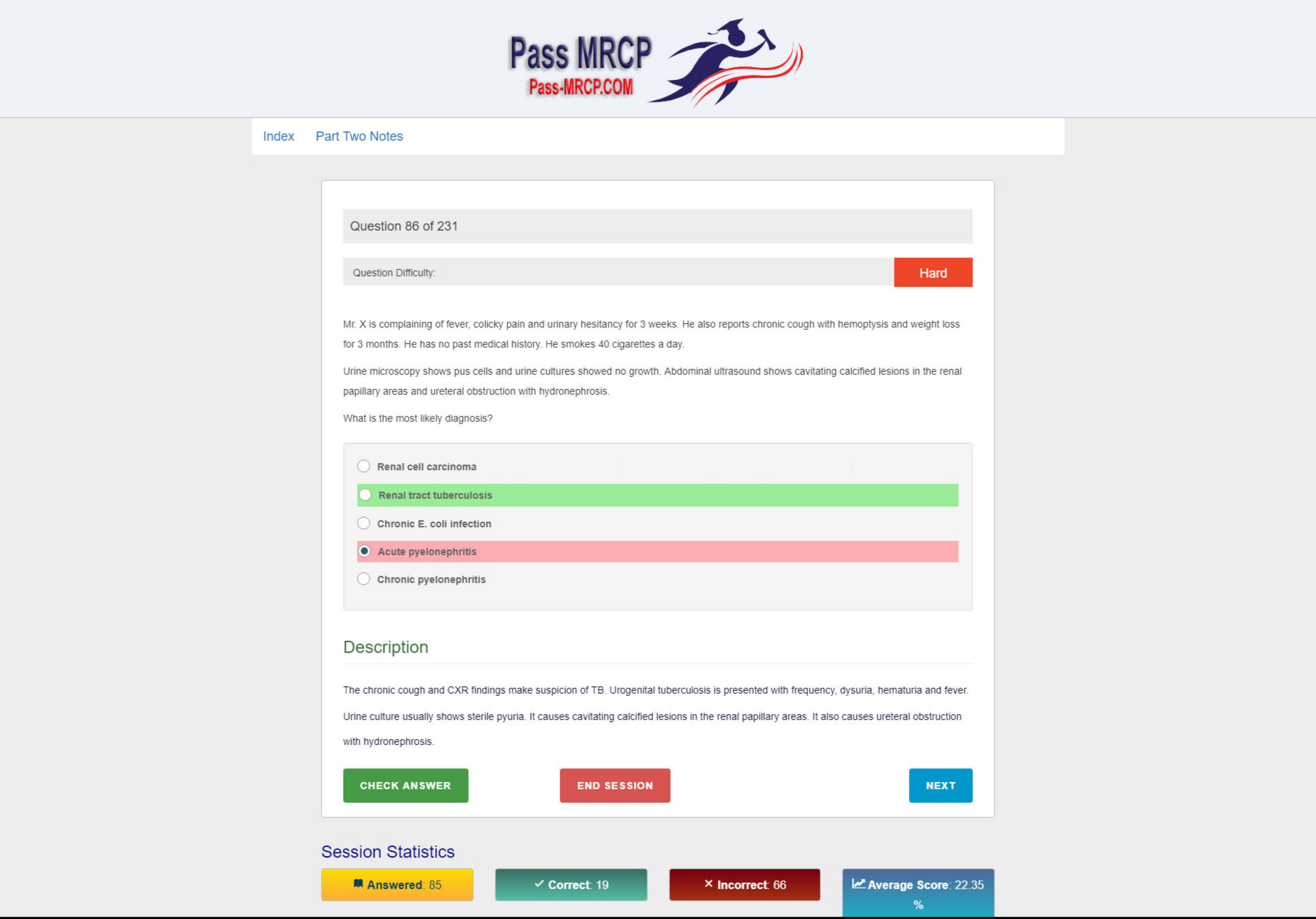
According to NICE guidelines 2016; requesting rapid diagnostic nucleic acid amplification tests for rifampicin resistance is indicated if there is a risk for multidrug resistance identifies any risk factors as contact with a known case of multidrug-resistant TB.

If the rapid diagnostic nucleic acid amplification tests for rifampicin resistance is positive: offer a treatment regimen involving at least 6 drugs and test for resistance to second-line drugs. Treatment should last for 18 to 24 months.

If the rapid diagnostic nucleic acid amplification test is positive but rifampicin resistance is not detected, treat TB with the standard regimen.

Session Statistics

Answered: 84
✓ **Correct**: 19
✕ **Incorrect**: 65
Average Score: 22.62 %



Question 86 of 231

Question Difficulty: Hard

Mr. X is complaining of fever, colicky pain and urinary hesitancy for 3 weeks. He also reports chronic cough with hemoptysis and weight loss for 3 months. He has no past medical history. He smokes 40 cigarettes a day.

Urine microscopy shows pus cells and urine cultures showed no growth. Abdominal ultrasound shows cavitating calcified lesions in the renal papillary areas and ureteral obstruction with hydronephrosis.

What is the most likely diagnosis?

- ○ **Renal cell carcinoma**
- ○ **Renal tract tuberculosis**
- ○ **Chronic E. coli infection**
- ● **Acute pyelonephritis**
- ○ **Chronic pyelonephritis**

Description

The chronic cough and CXR findings make suspicion of TB. Urogenital tuberculosis is presented with frequency, dysuria, hematuria and fever. Urine culture usually shows sterile pyuria. It causes cavitating calcified lesions in the renal papillary areas. It also causes ureteral obstruction with hydronephrosis.

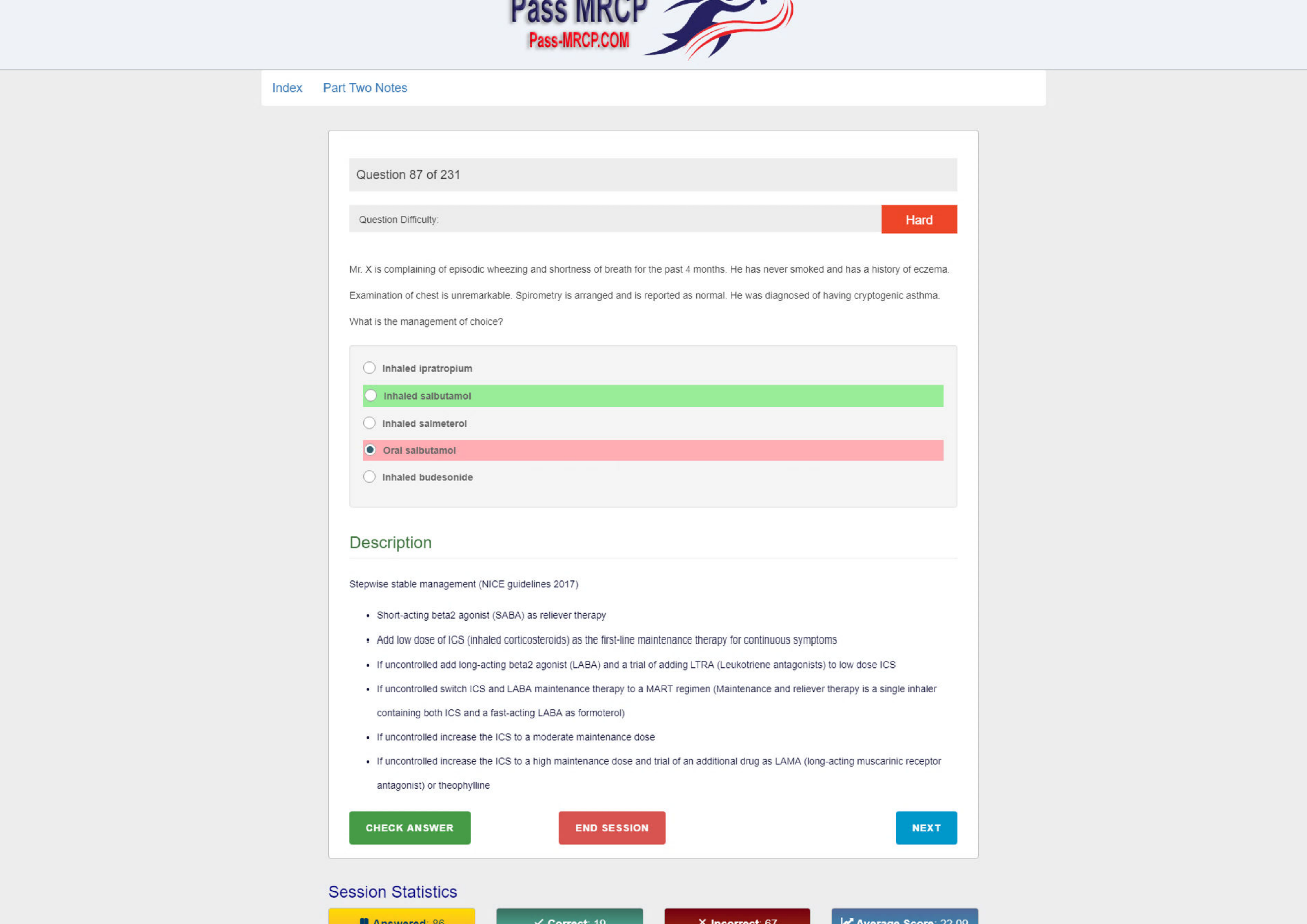
Session Statistics

Answered: 85

✓ **Correct**: 19

✕ **Incorrect**: 66

Average Score: 22.35 %



Question 87 of 231

Question Difficulty: **Hard**

Mr. X is complaining of episodic wheezing and shortness of breath for the past 4 months. He has never smoked and has a history of eczema. Examination of chest is unremarkable. Spirometry is arranged and is reported as normal. He was diagnosed of having cryptogenic asthma.

What is the management of choice?

○ **Inhaled ipratropium**

○ **Inhaled salbutamol**

○ **Inhaled salmeterol**

● **Oral salbutamol**

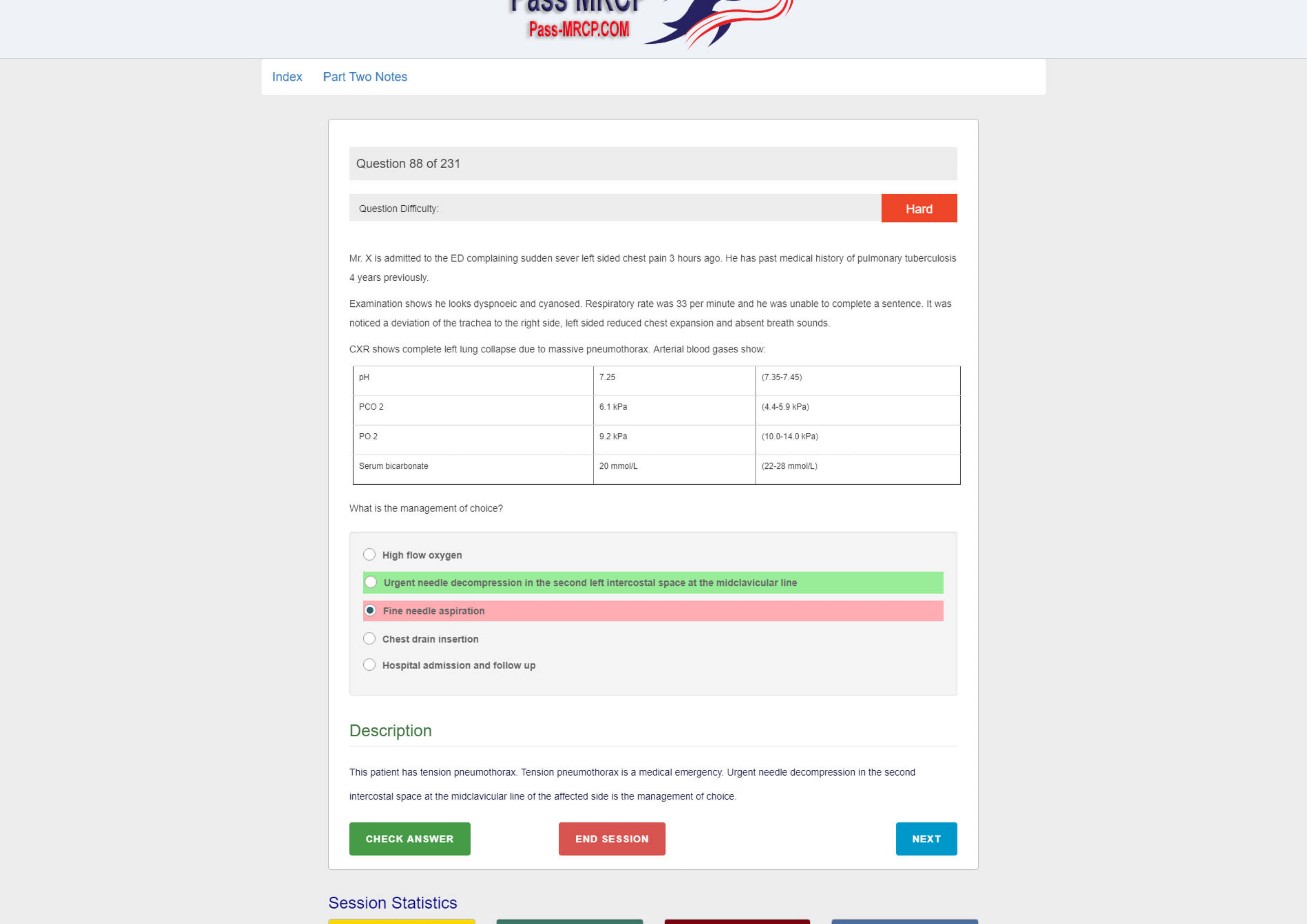
○ **Inhaled budesonide**

Description

Stepwise stable management (NICE guidelines 2017)

- Short-acting beta2 agonist (SABA) as reliever therapy
- Add low dose of ICS (inhaled corticosteroids) as the first-line maintenance therapy for continuous symptoms
- If uncontrolled add long-acting beta2 agonist (LABA) and a trial of adding LTRA (Leukotriene antagonists) to low dose ICS
- If uncontrolled switch ICS and LABA maintenance therapy to a MART regimen (Maintenance and reliever therapy is a single inhaler containing both ICS and a fast-acting LABA as formoterol)
- If uncontrolled increase the ICS to a moderate maintenance dose
- If uncontrolled increase the ICS to a high maintenance dose and trial of an additional drug as LAMA (long-acting muscarinic receptor antagonist) or theophylline

Session Statistics



Question 88 of 231

Question Difficulty: **Hard**

Mr. X is admitted to the ED complaining sudden sever left sided chest pain 3 hours ago. He has past medical history of pulmonary tuberculosis 4 years previously.

Examination shows he looks dyspnoeic and cyanosed. Respiratory rate was 33 per minute and he was unable to complete a sentence. It was noticed a deviation of the trachea to the right side, left sided reduced chest expansion and absent breath sounds.

CXR shows complete left lung collapse due to massive pneumothorax. Arterial blood gases show:

pH	7.25	(7.35-7.45)
PCO 2	6.1 kPa	(4.4-5.9 kPa)
PO 2	9.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	20 mmol/L	(22-28 mmol/L)

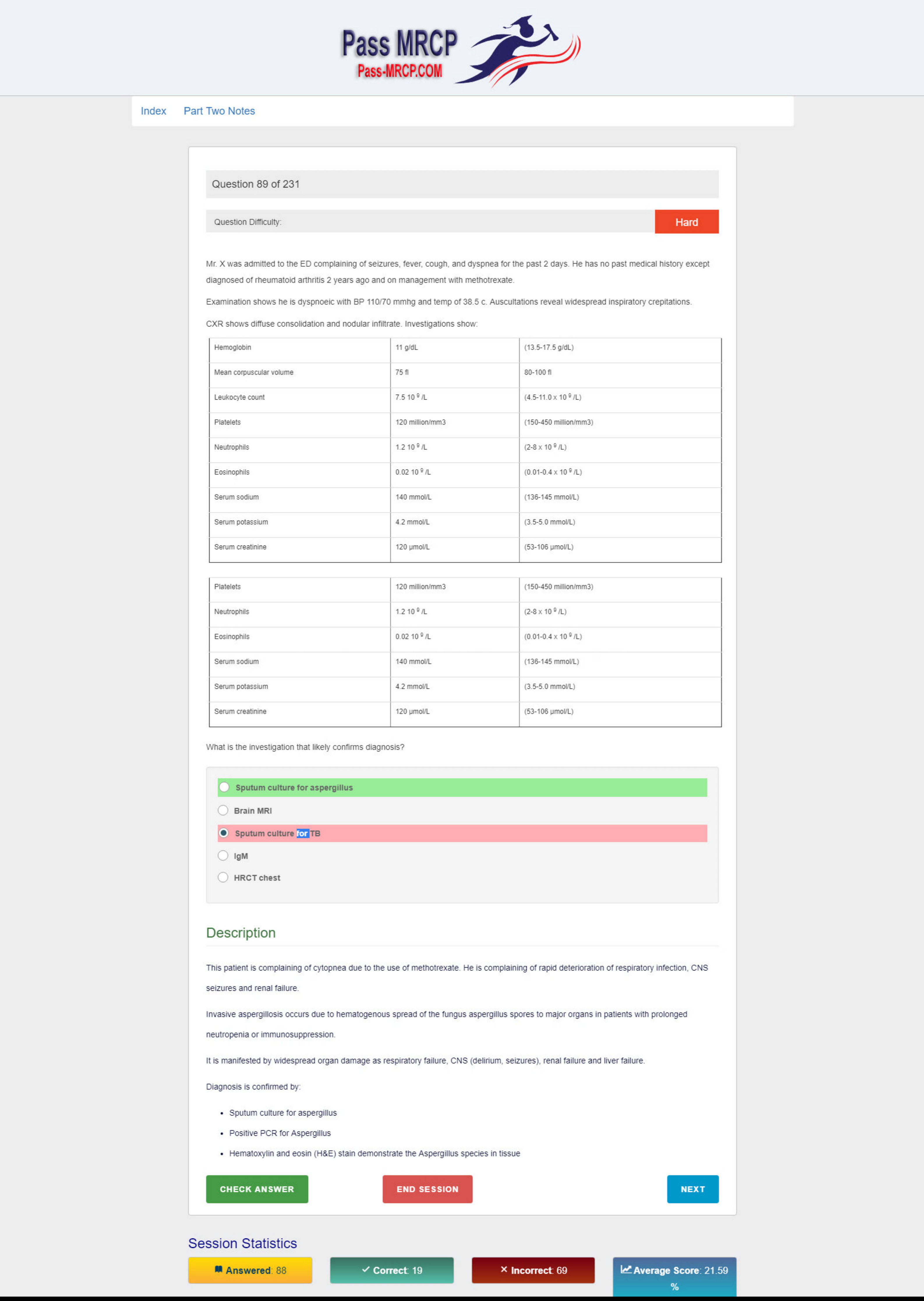
What is the management of choice?

- ○ **High flow oxygen**
- ○ **Urgent needle decompression in the second left intercostal space at the midclavicular line**
- ● **Fine needle aspiration**
- ○ **Chest drain insertion**
- ○ **Hospital admission and follow up**

Description

This patient has tension pneumothorax. Tension pneumothorax is a medical emergency. Urgent needle decompression in the second intercostal space at the midclavicular line of the affected side is the management of choice.

Session Statistics



Question 89 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED complaining of seizures, fever, cough, and dyspnea for the past 2 days. He has no past medical history except diagnosed of rheumatoid arthritis 2 years ago and on management with methotrexate.

Examination shows he is dyspnoeic with BP 110/70 mmhg and temp of 38.5 c. Auscultations reveal widespread inspiratory crepitations.

CXR shows diffuse consolidation and nodular infiltrate. Investigations show:

Hemoglobin	11 g/dL	(13.5-17.5 g/dL)
Mean corpuscular volume	75 fl	80-100 fl
Leukocyte count	7.5 10^9/L	(4.5-11.0 x 10^9/L)
Platelets	120 million/mm3	(150-450 million/mm3)
Neutrophils	1.2 10^9/L	(2-8 x 10^9/L)
Eosinophils	0.02 10^9/L	(0.01-0.4 x 10^9/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	120 µmol/L	(53-106 µmol/L)

Platelets	120 million/mm3	(150-450 million/mm3)
Neutrophils	1.2 10^9/L	(2-8 x 10^9/L)
Eosinophils	0.02 10^9/L	(0.01-0.4 x 10^9/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	120 µmol/L	(53-106 µmol/L)

What is the investigation that likely confirms diagnosis?

○ **Sputum culture for aspergillus**
○ **Brain MRI**
● **Sputum culture for TB**
○ **IgM**
○ **HRCT chest**

Description

This patient is complaining of cytopnea due to the use of methotrexate. He is complaining of rapid deterioration of respiratory infection, CNS seizures and renal failure.

Invasive aspergillosis occurs due to hematogenous spread of the fungus aspergillus spores to major organs in patients with prolonged neutropenia or immunosuppression.

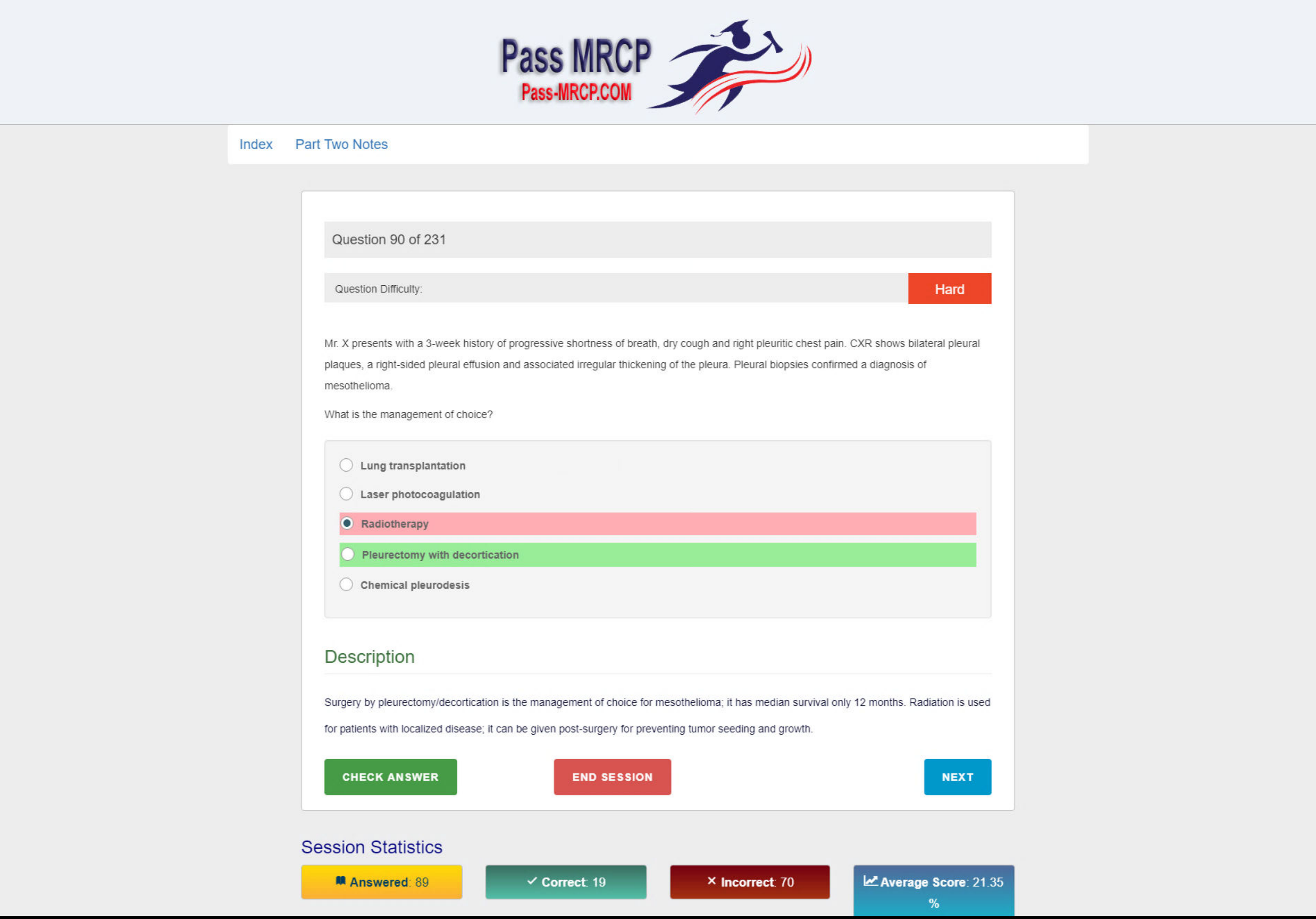
It is manifested by widespread organ damage as respiratory failure, CNS (delirium, seizures), renal failure and liver failure.

Diagnosis is confirmed by:

- Sputum culture for aspergillus
- Positive PCR for Aspergillus
- Hematoxylin and eosin (H&E) stain demonstrate the Aspergillus species in tissue

Session Statistics

Answered: 88 ✓ **Correct**: 19 ✕ **Incorrect**: 69 **Average Score**: 21.59 %



Question 90 of 231

Question Difficulty: **Hard**

Mr. X presents with a 3-week history of progressive shortness of breath, dry cough and right pleuritic chest pain. CXR shows bilateral pleural plaques, a right-sided pleural effusion and associated irregular thickening of the pleura. Pleural biopsies confirmed a diagnosis of mesothelioma.

What is the management of choice?

- ○ **Lung transplantation**
- ○ **Laser photocoagulation**
- ● **Radiotherapy**
- ○ **Pleurectomy with decortication**
- ○ **Chemical pleurodesis**

Description

Surgery by pleurectomy/decortication is the management of choice for mesothelioma; it has median survival only 12 months. Radiation is used for patients with localized disease; it can be given post-surgery for preventing tumor seeding and growth.

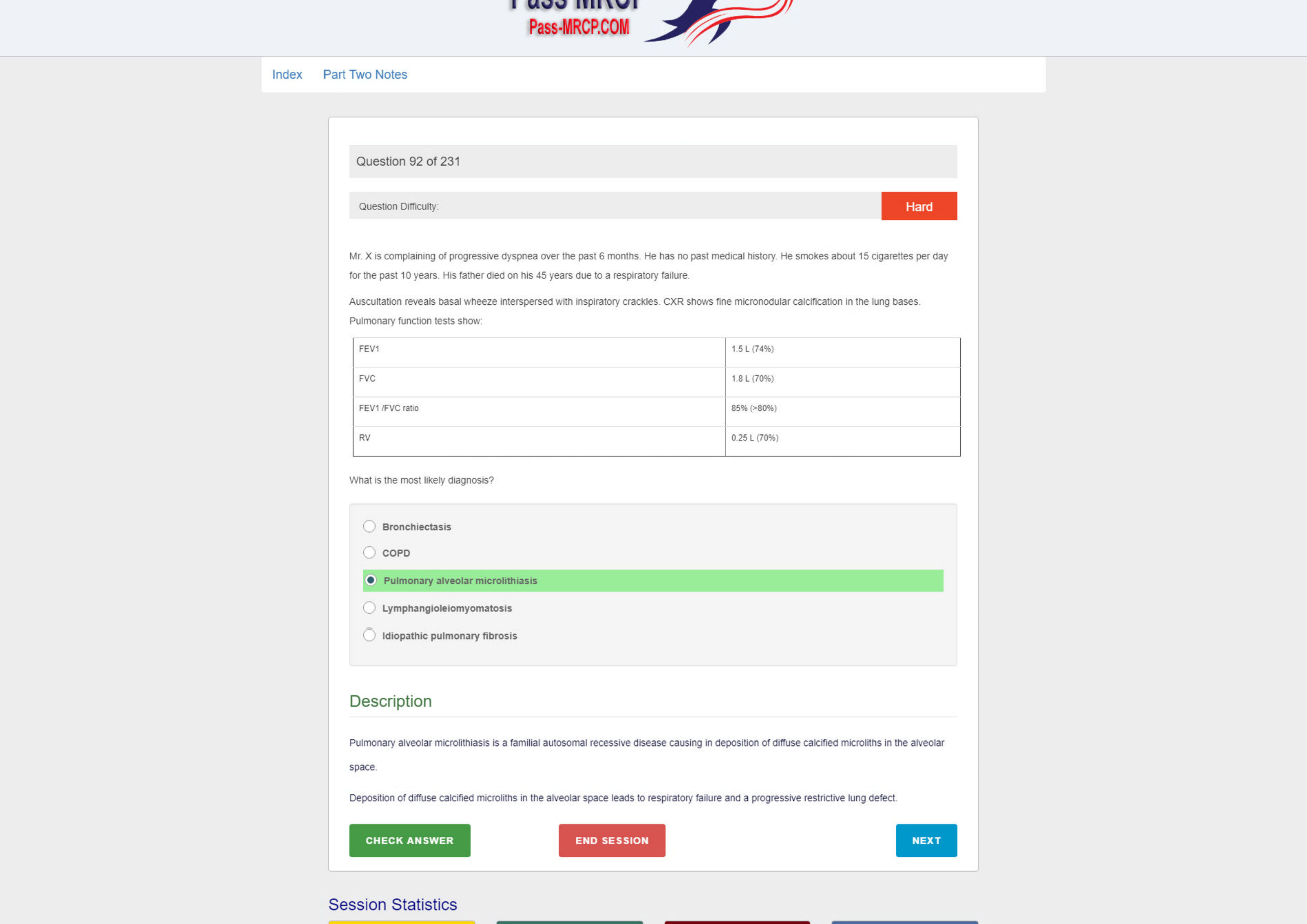
Session Statistics

Answered: 89

✓ **Correct**: 19

✕ **Incorrect**: 70

Average Score: 21.35 %



Question 92 of 231

Question Difficulty: **Hard**

Mr. X is complaining of progressive dyspnea over the past 6 months. He has no past medical history. He smokes about 15 cigarettes per day for the past 10 years. His father died on his 45 years due to a respiratory failure.

Auscultation reveals basal wheeze interspersed with inspiratory crackles. CXR shows fine micronodular calcification in the lung bases. Pulmonary function tests show:

FEV1	1.5 L (74%)
FVC	1.8 L (70%)
FEV1 /FVC ratio	85% (>80%)
RV	0.25 L (70%)

What is the most likely diagnosis?

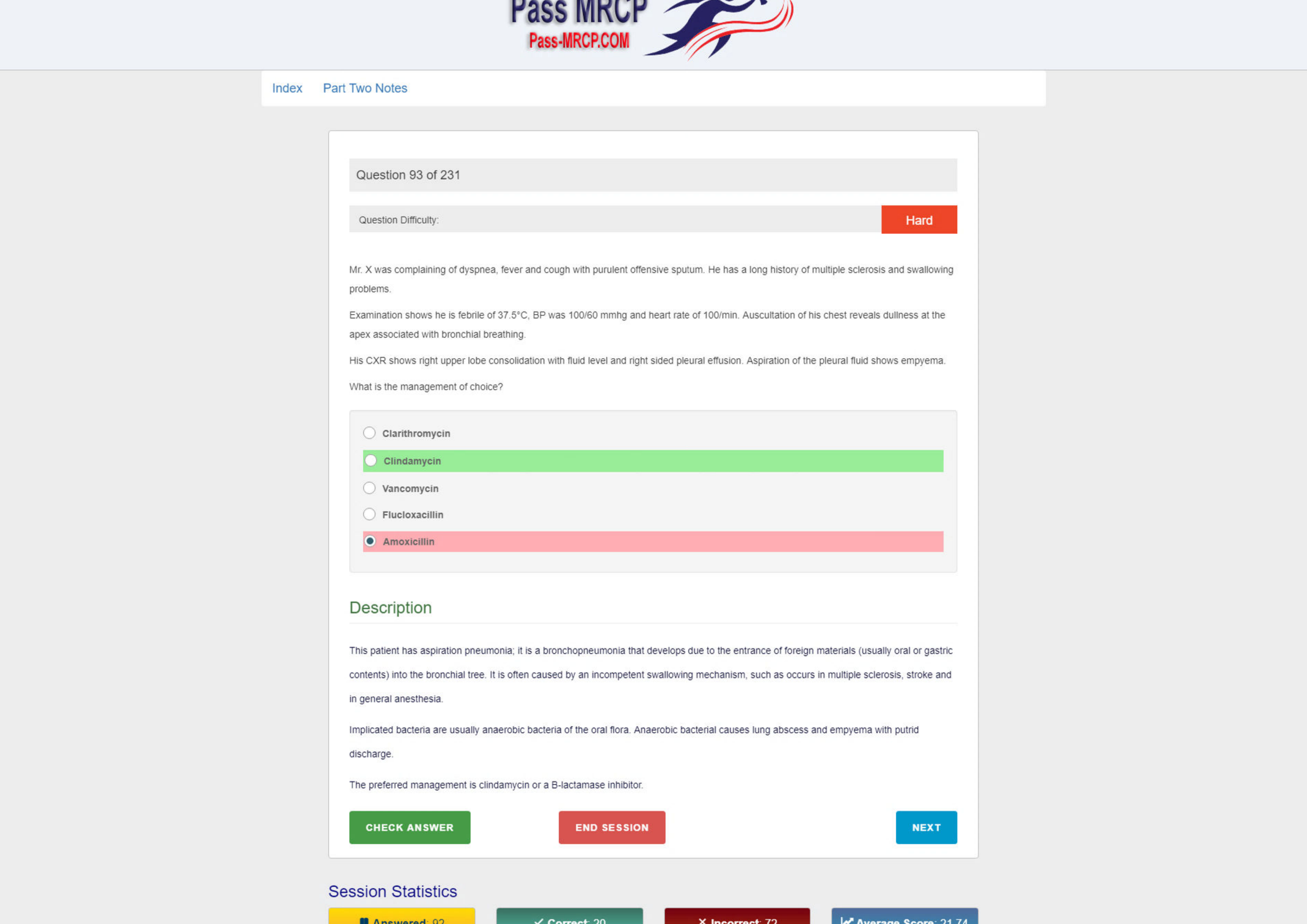
- ○ **Bronchiectasis**
- ○ **COPD**
- ● **Pulmonary alveolar microlithiasis**
- ○ **Lymphangioleiomyomatosis**
- ○ **Idiopathic pulmonary fibrosis**

Description

Pulmonary alveolar microlithiasis is a familial autosomal recessive disease causing in deposition of diffuse calcified microliths in the alveolar space.

Deposition of diffuse calcified microliths in the alveolar space leads to respiratory failure and a progressive restrictive lung defect.

Session Statistics



Question 93 of 231

Question Difficulty: Hard

Mr. X was complaining of dyspnea, fever and cough with purulent offensive sputum. He has a long history of multiple sclerosis and swallowing problems.

Examination shows he is febrile of 37.5°C, BP was 100/60 mmhg and heart rate of 100/min. Auscultation of his chest reveals dullness at the apex associated with bronchial breathing.

His CXR shows right upper lobe consolidation with fluid level and right sided pleural effusion. Aspiration of the pleural fluid shows empyema.

What is the management of choice?

○ **Clarithromycin**

○ **Clindamycin**

○ **Vancomycin**

○ **Flucloxacillin**

● **Amoxicillin**

Description

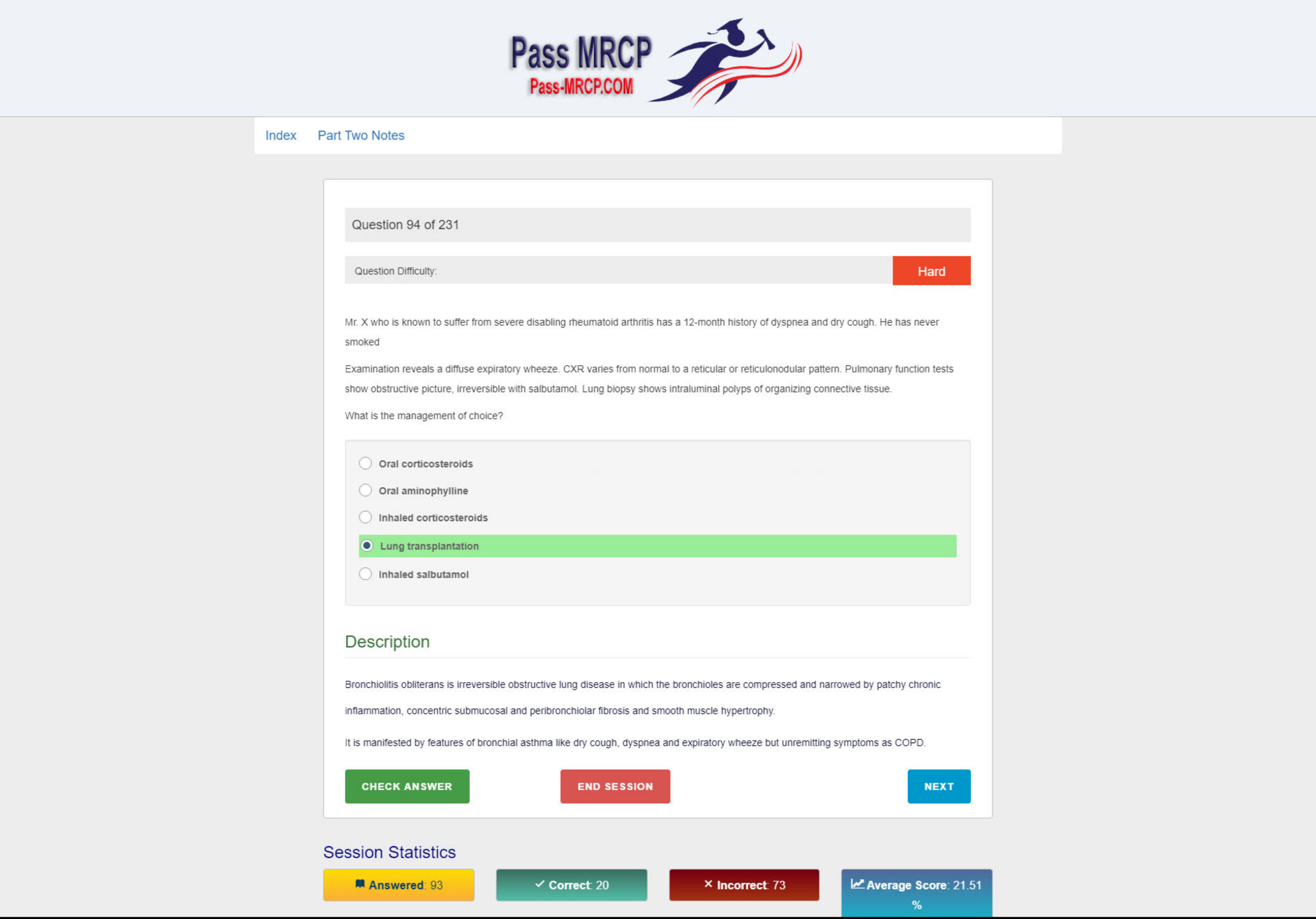
This patient has aspiration pneumonia; it is a bronchopneumonia that develops due to the entrance of foreign materials (usually oral or gastric contents) into the bronchial tree. It is often caused by an incompetent swallowing mechanism, such as occurs in multiple sclerosis, stroke and in general anesthesia.

Implicated bacteria are usually anaerobic bacteria of the oral flora. Anaerobic bacterial causes lung abscess and empyema with putrid discharge.

The preferred management is clindamycin or a B-lactamase inhibitor.

Session Statistics

Answered: 92
✓ Correct: 20
✕ Incorrect: 72
Average Score: 21.74



Question 94 of 231

Question Difficulty: Hard

Mr. X who is known to suffer from severe disabling rheumatoid arthritis has a 12-month history of dyspnea and dry cough. He has never smoked

Examination reveals a diffuse expiratory wheeze. CXR varies from normal to a reticular or reticulonodular pattern. Pulmonary function tests show obstructive picture, irreversible with salbutamol. Lung biopsy shows intraluminal polyps of organizing connective tissue.

What is the management of choice?

- ○ **Oral corticosteroids**
- ○ **Oral aminophylline**
- ○ **Inhaled corticosteroids**
- ● **Lung transplantation**
- ○ **Inhaled salbutamol**

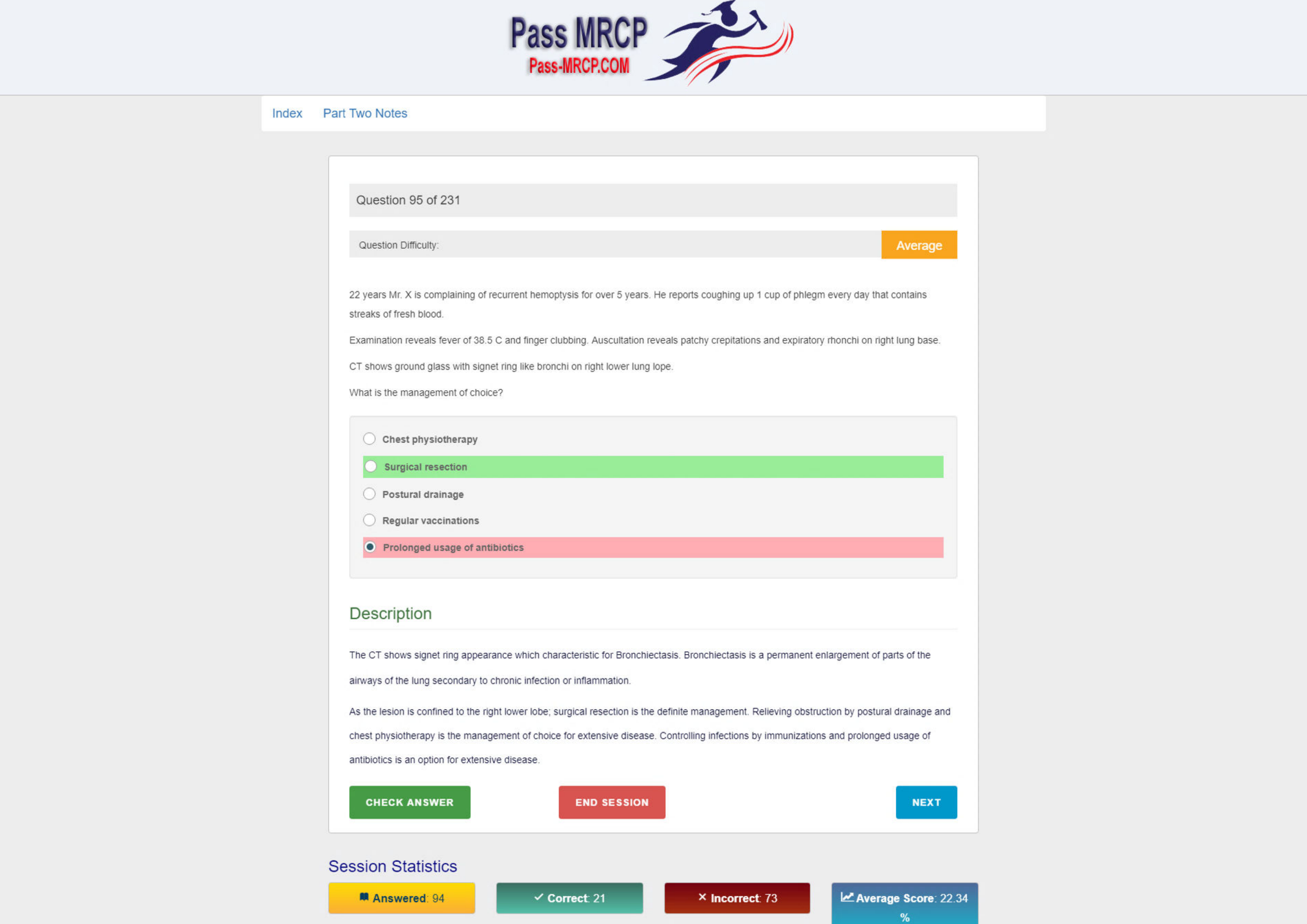
Description

Bronchiolitis obliterans is irreversible obstructive lung disease in which the bronchioles are compressed and narrowed by patchy chronic inflammation, concentric submucosal and peribronchiolar fibrosis and smooth muscle hypertrophy.

It is manifested by features of bronchial asthma like dry cough, dyspnea and expiratory wheeze but unremitting symptoms as COPD.

Session Statistics

Answered: 93
✓ **Correct**: 20
× **Incorrect**: 73
Average Score: 21.51 %



Question 95 of 231

Question Difficulty: Average

22 years Mr. X is complaining of recurrent hemoptysis for over 5 years. He reports coughing up 1 cup of phlegm every day that contains streaks of fresh blood.

Examination reveals fever of 38.5 C and finger clubbing. Auscultation reveals patchy crepitations and expiratory rhonchi on right lung base.

CT shows ground glass with signet ring like bronchi on right lower lung lope.

What is the management of choice?

- ○ Chest physiotherapy
- ○ Surgical resection
- ○ Postural drainage
- ○ Regular vaccinations
- ● Prolonged usage of antibiotics

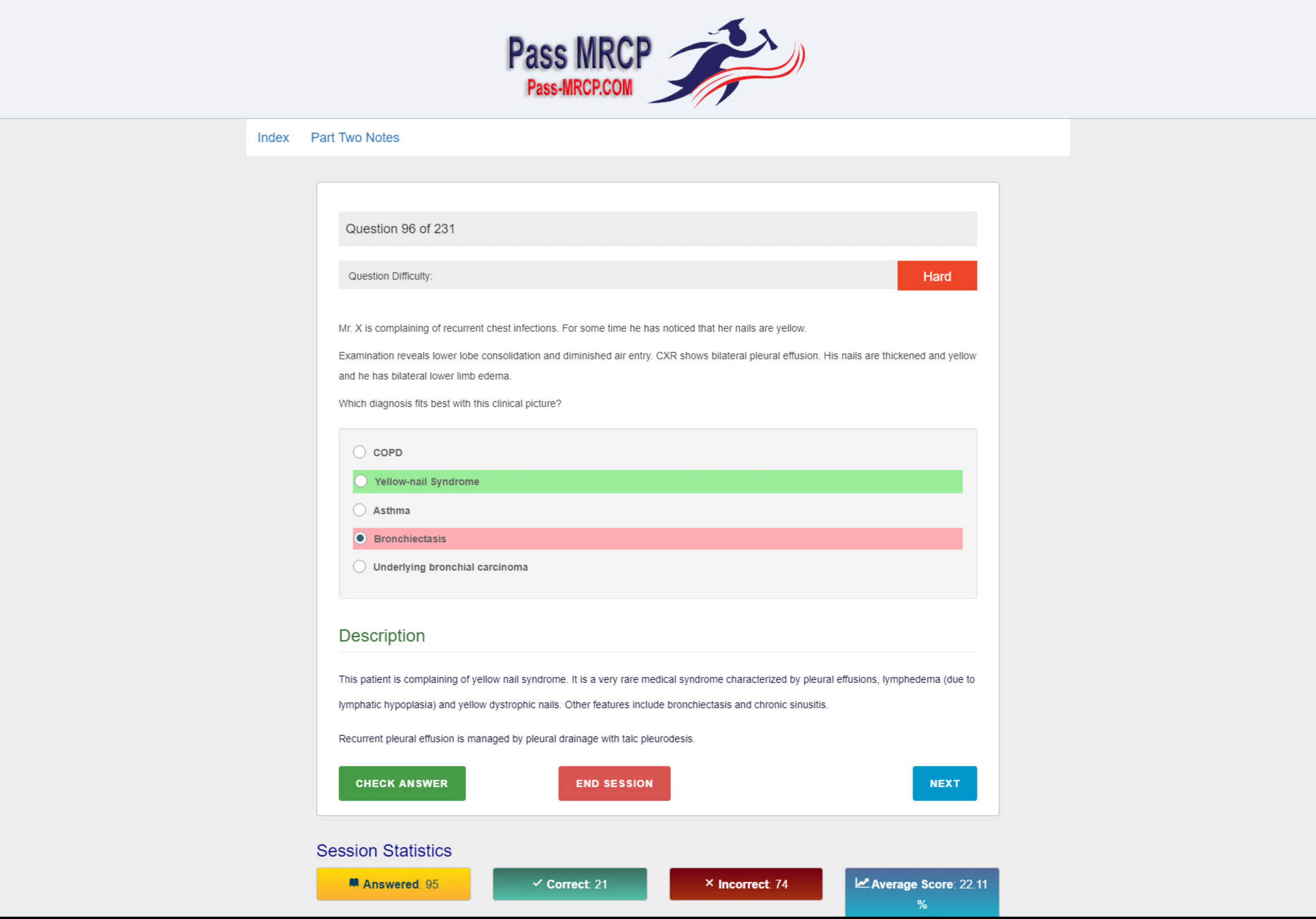
Description

The CT shows signet ring appearance which characteristic for Bronchiectasis. Bronchiectasis is a permanent enlargement of parts of the airways of the lung secondary to chronic infection or inflammation.

As the lesion is confined to the right lower lobe; surgical resection is the definite management. Relieving obstruction by postural drainage and chest physiotherapy is the management of choice for extensive disease. Controlling infections by immunizations and prolonged usage of antibiotics is an option for extensive disease.

Session Statistics

Answered: 94
✓ Correct: 21
× Incorrect: 73
Average Score: 22.34 %



Question 96 of 231

Question Difficulty: Hard

Mr. X is complaining of recurrent chest infections. For some time he has noticed that her nails are yellow.

Examination reveals lower lobe consolidation and diminished air entry. CXR shows bilateral pleural effusion. His nails are thickened and yellow and he has bilateral lower limb edema.

Which diagnosis fits best with this clinical picture?

○ COPD
○ Yellow-nail Syndrome
○ Asthma
● Bronchiectasis
○ Underlying bronchial carcinoma

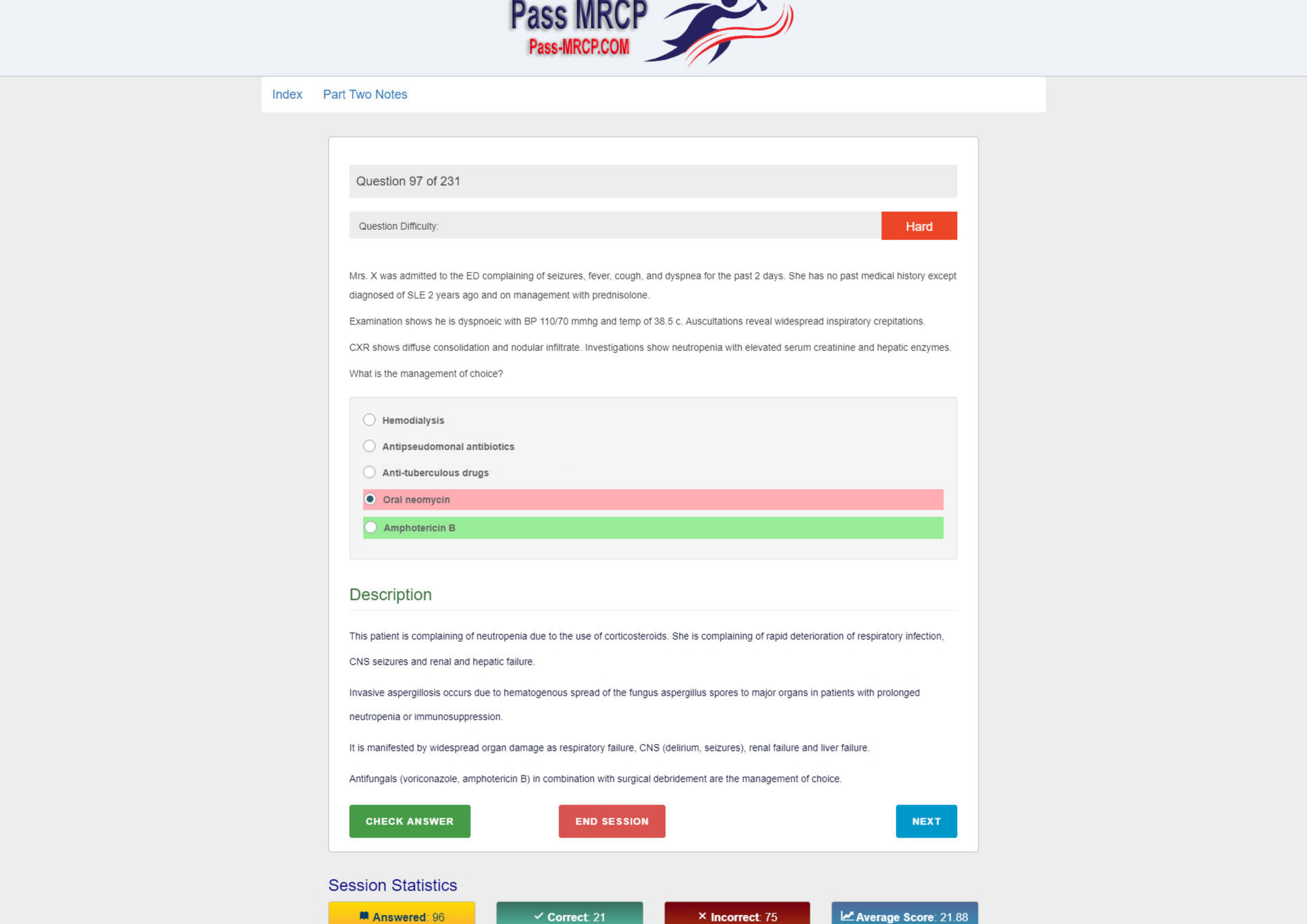
Description

This patient is complaining of yellow nail syndrome. It is a very rare medical syndrome characterized by pleural effusions, lymphedema (due to lymphatic hypoplasia) and yellow dystrophic nails. Other features include bronchiectasis and chronic sinusitis.

Recurrent pleural effusion is managed by pleural drainage with talc pleurodesis.

Session Statistics

Answered: 95
✓ Correct: 21
✕ Incorrect: 74
Average Score: 22.11 %



Question 97 of 231

Question Difficulty: **Hard**

Mrs. X was admitted to the ED complaining of seizures, fever, cough, and dyspnea for the past 2 days. She has no past medical history except diagnosed of SLE 2 years ago and on management with prednisolone.

Examination shows he is dyspnoeic with BP 110/70 mmhg and temp of 38.5 c. Auscultations reveal widespread inspiratory crepitations.

CXR shows diffuse consolidation and nodular infiltrate. Investigations show neutropenia with elevated serum creatinine and hepatic enzymes.

What is the management of choice?

○ **Hemodialysis**
○ **Antipseudomonal antibiotics**
○ **Anti-tuberculous drugs**
● **Oral neomycin**
○ **Amphotericin B**

Description

This patient is complaining of neutropenia due to the use of corticosteroids. She is complaining of rapid deterioration of respiratory infection, CNS seizures and renal and hepatic failure.

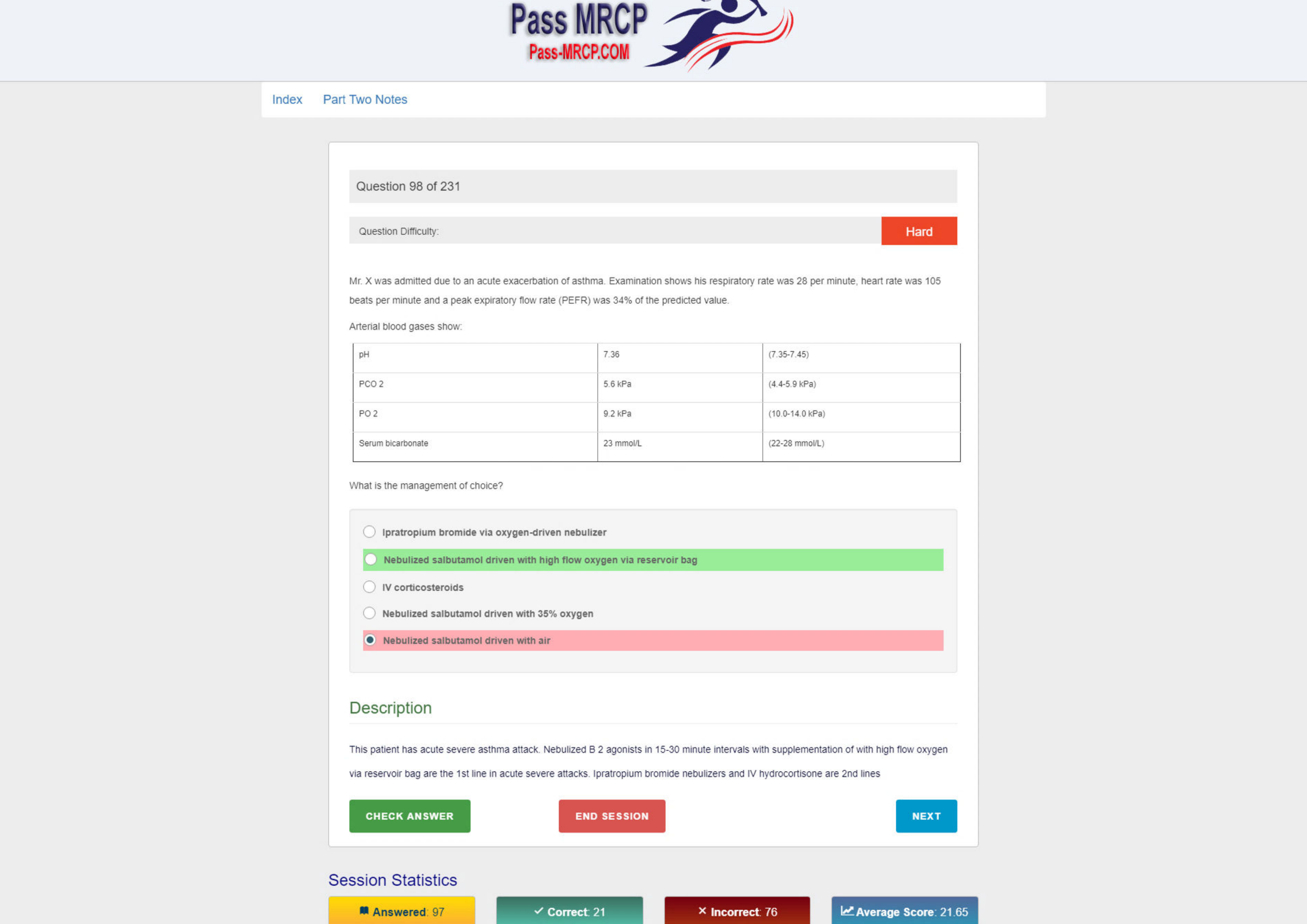
Invasive aspergillosis occurs due to hematogenous spread of the fungus aspergillus spores to major organs in patients with prolonged neutropenia or immunosuppression.

It is manifested by widespread organ damage as respiratory failure, CNS (delirium, seizures), renal failure and liver failure.

Antifungals (voriconazole, amphotericin B) in combination with surgical debridement are the management of choice.

Session Statistics

Answered: 96
✓ **Correct**: 21
✕ **Incorrect**: 75
Average Score: 21.88



Question 98 of 231

Question Difficulty: **Hard**

Mr. X was admitted due to an acute exacerbation of asthma. Examination shows his respiratory rate was 28 per minute, heart rate was 105 beats per minute and a peak expiratory flow rate (PEFR) was 34% of the predicted value.

Arterial blood gases show:

pH	7.36	(7.35-7.45)
PCO 2	5.6 kPa	(4.4-5.9 kPa)
PO 2	9.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	23 mmol/L	(22-28 mmol/L)

What is the management of choice?

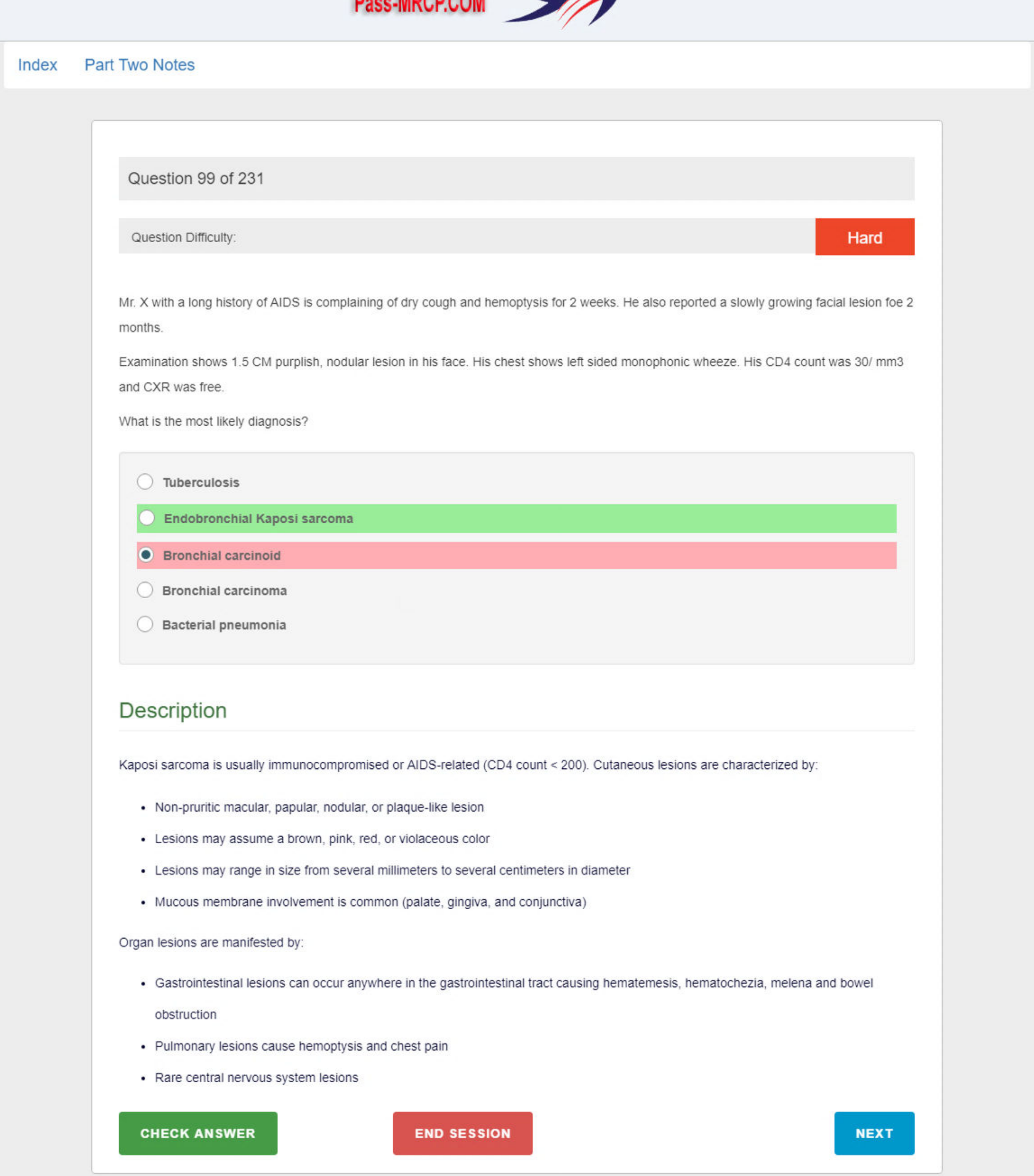
- ○ **Ipratropium bromide via oxygen-driven nebulizer**
- ○ **Nebulized salbutamol driven with high flow oxygen via reservoir bag** 🟩
- ○ **IV corticosteroids**
- ○ **Nebulized salbutamol driven with 35% oxygen**
- ● **Nebulized salbutamol driven with air** 🟥

Description

This patient has acute severe asthma attack. Nebulized B 2 agonists in 15-30 minute intervals with supplementation of with high flow oxygen via reservoir bag are the 1st line in acute severe attacks. Ipratropium bromide nebulizers and IV hydrocortisone are 2nd lines

Session Statistics

Answered: 97
Correct: 21
Incorrect: 76
Average Score: 21.65



Question 99 of 231

Question Difficulty: **Hard**

Mr. X with a long history of AIDS is complaining of dry cough and hemoptysis for 2 weeks. He also reported a slowly growing facial lesion foe 2 months.

Examination shows 1.5 CM purplish, nodular lesion in his face. His chest shows left sided monophonic wheeze. His CD4 count was 30/ mm3 and CXR was free.

What is the most likely diagnosis?

○ **Tuberculosis**
○ **Endobronchial Kaposi sarcoma**
● **Bronchial carcinoid**
○ **Bronchial carcinoma**
○ **Bacterial pneumonia**

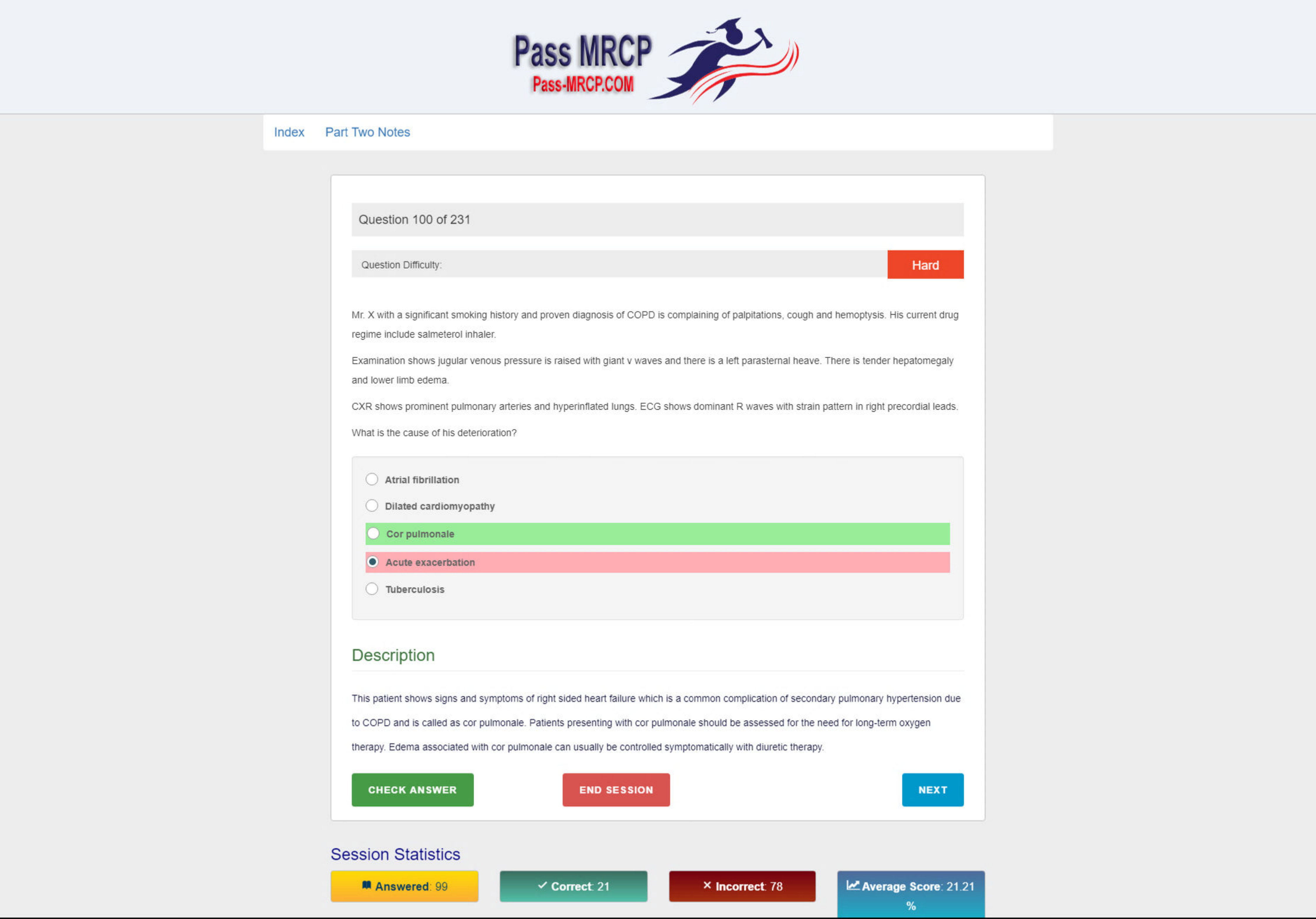
Description

Kaposi sarcoma is usually immunocompromised or AIDS-related (CD4 count < 200). Cutaneous lesions are characterized by:

- Non-pruritic macular, papular, nodular, or plaque-like lesion
- Lesions may assume a brown, pink, red, or violaceous color
- Lesions may range in size from several millimeters to several centimeters in diameter
- Mucous membrane involvement is common (palate, gingiva, and conjunctiva)

Organ lesions are manifested by:

- Gastrointestinal lesions can occur anywhere in the gastrointestinal tract causing hematemesis, hematochezia, melena and bowel obstruction
- Pulmonary lesions cause hemoptysis and chest pain
- Rare central nervous system lesions



Question 100 of 231

Question Difficulty: **Hard**

Mr. X with a significant smoking history and proven diagnosis of COPD is complaining of palpitations, cough and hemoptysis. His current drug regime include salmeterol inhaler.

Examination shows jugular venous pressure is raised with giant v waves and there is a left parasternal heave. There is tender hepatomegaly and lower limb edema.

CXR shows prominent pulmonary arteries and hyperinflated lungs. ECG shows dominant R waves with strain pattern in right precordial leads.

What is the cause of his deterioration?

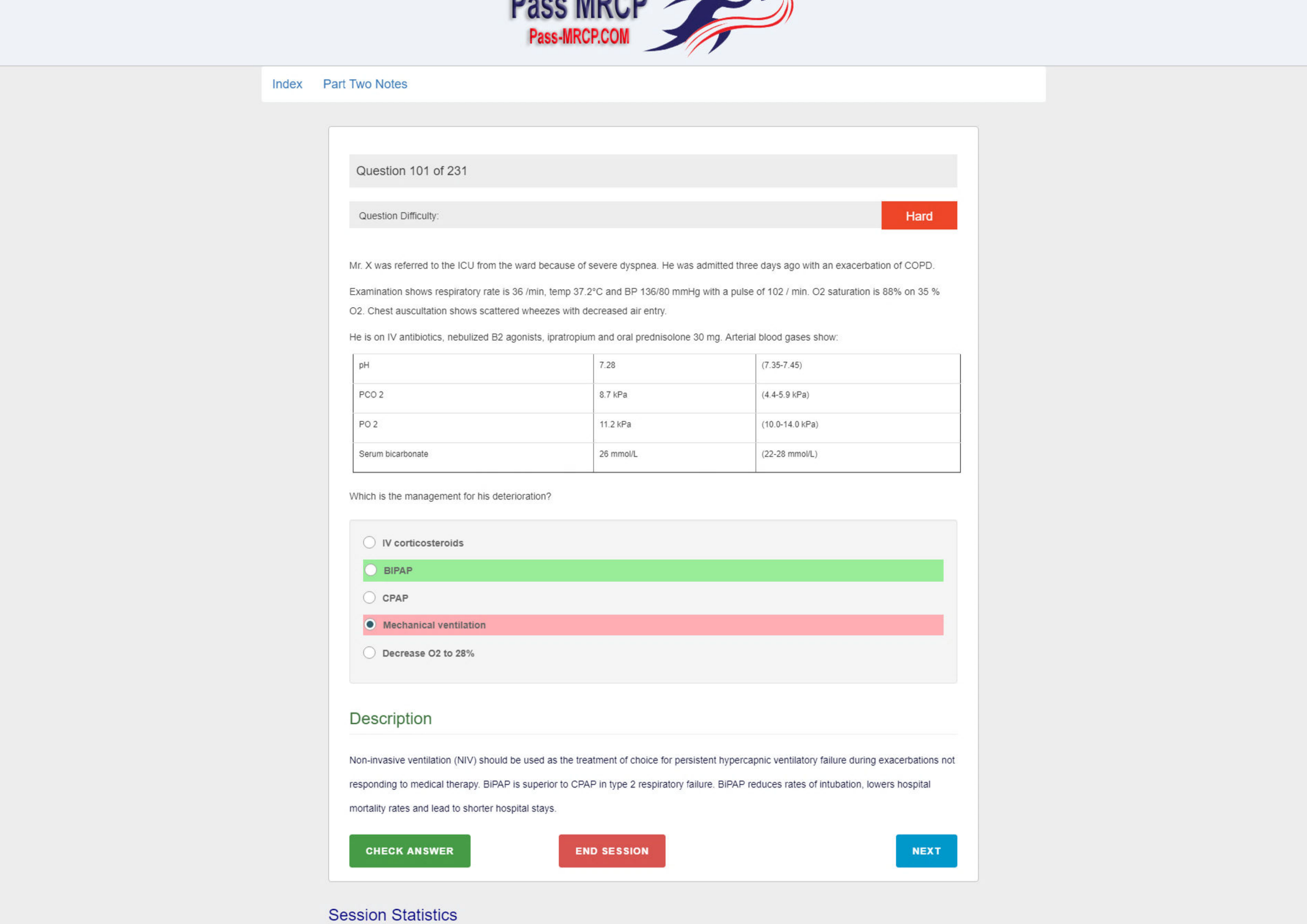
○ **Atrial fibrillation**
○ **Dilated cardiomyopathy**
○ **Cor pulmonale**
● **Acute exacerbation**
○ **Tuberculosis**

Description

This patient shows signs and symptoms of right sided heart failure which is a common complication of secondary pulmonary hypertension due to COPD and is called as cor pulmonale. Patients presenting with cor pulmonale should be assessed for the need for long-term oxygen therapy. Edema associated with cor pulmonale can usually be controlled symptomatically with diuretic therapy.

Session Statistics

Answered: 99
✓ **Correct**: 21
✕ **Incorrect**: 78
Average Score: 21.21 %



Question 101 of 231

Question Difficulty: **Hard**

Mr. X was referred to the ICU from the ward because of severe dyspnea. He was admitted three days ago with an exacerbation of COPD.

Examination shows respiratory rate is 36 /min, temp 37.2°C and BP 136/80 mmHg with a pulse of 102 / min. O2 saturation is 88% on 35 % O2. Chest auscultation shows scattered wheezes with decreased air entry.

He is on IV antibiotics, nebulized B2 agonists, ipratropium and oral prednisolone 30 mg. Arterial blood gases show:

pH	7.28	(7.35-7.45)
PCO 2	8.7 kPa	(4.4-5.9 kPa)
PO 2	11.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	26 mmol/L	(22-28 mmol/L)

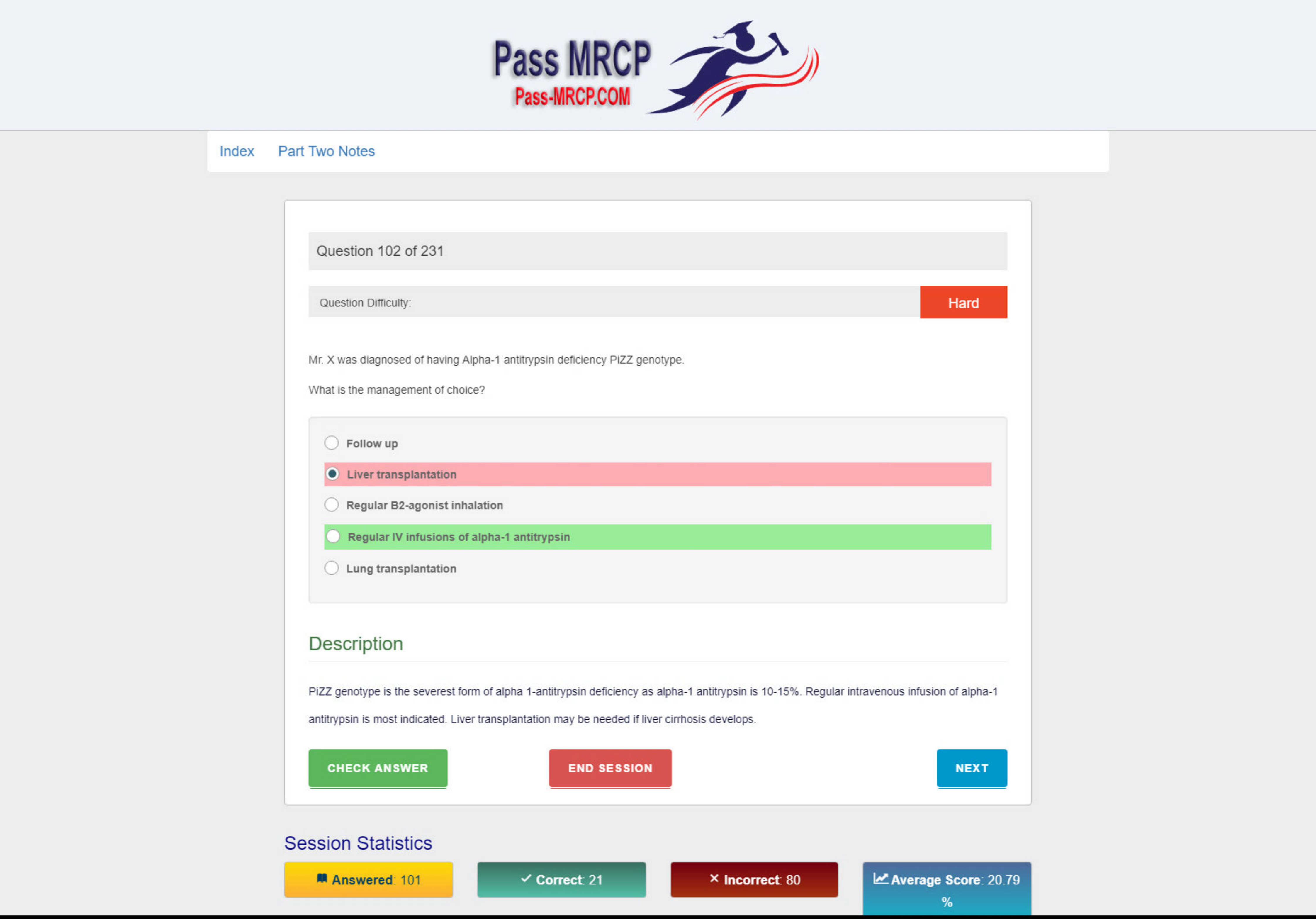
Which is the management for his deterioration?

- ○ IV corticosteroids
- ○ BIPAP
- ○ CPAP
- ● Mechanical ventilation
- ○ Decrease O2 to 28%

Description

Non-invasive ventilation (NIV) should be used as the treatment of choice for persistent hypercapnic ventilatory failure during exacerbations not responding to medical therapy. BiPAP is superior to CPAP in type 2 respiratory failure. BiPAP reduces rates of intubation, lowers hospital mortality rates and lead to shorter hospital stays.

Session Statistics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Index
Part Two Notes

Question 102 of 231

Question Difficulty: Hard

Mr. X was diagnosed of having Alpha-1 antitrypsin deficiency PiZZ genotype.

What is the management of choice?

- ○ Follow up
- ● Liver transplantation
- ○ Regular B2-agonist inhalation
- ○ Regular IV infusions of alpha-1 antitrypsin
- ○ Lung transplantation

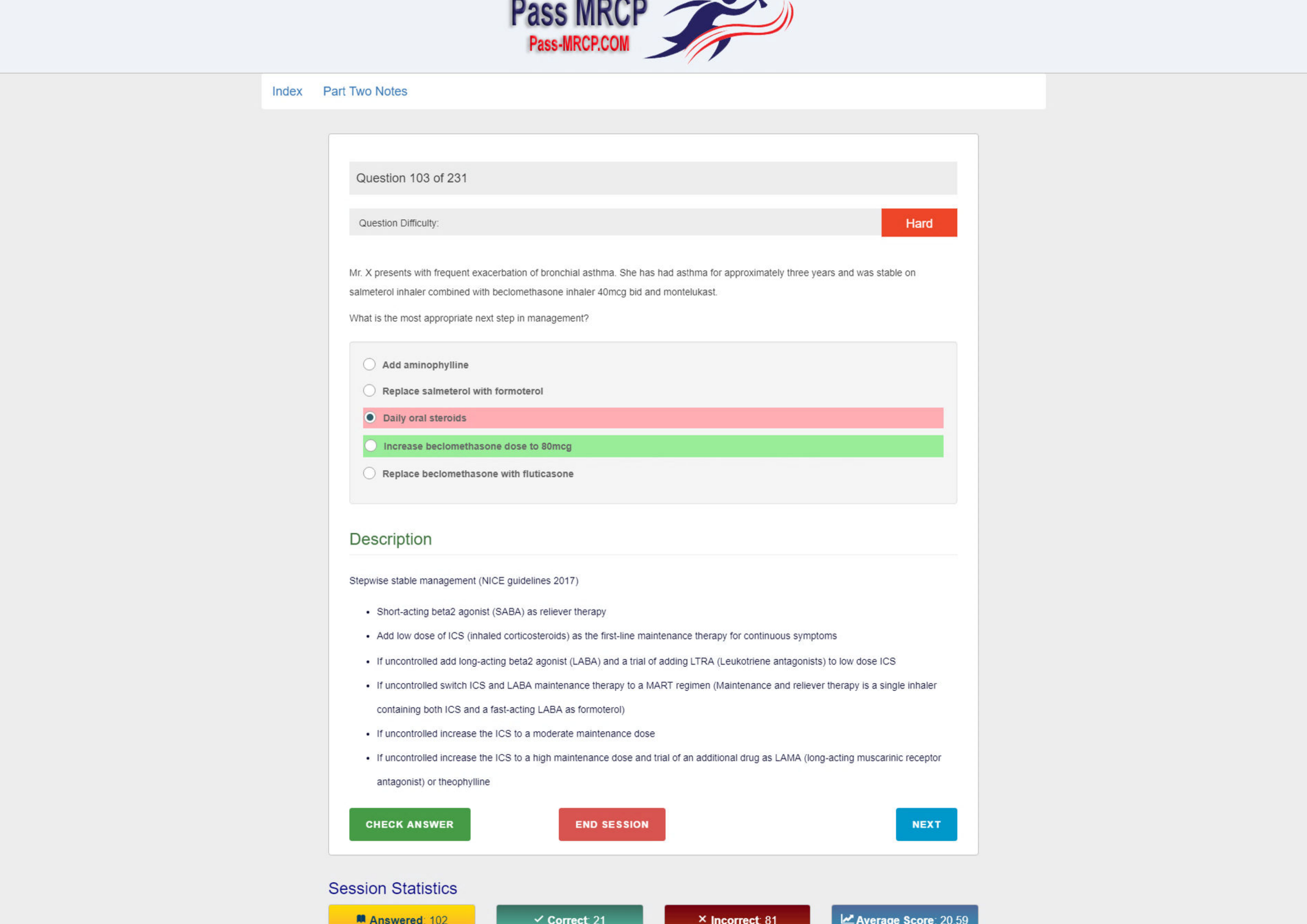
Description

PiZZ genotype is the severest form of alpha 1-antitrypsin deficiency as alpha-1 antitrypsin is 10-15%. Regular intravenous infusion of alpha-1 antitrypsin is most indicated. Liver transplantation may be needed if liver cirrhosis develops.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 101
✓ **Correct**: 21
✕ **Incorrect**: 80
Average Score: 20.79 %



Question 103 of 231

Question Difficulty: **Hard**

Mr. X presents with frequent exacerbation of bronchial asthma. She has had asthma for approximately three years and was stable on salmeterol inhaler combined with beclomethasone inhaler 40mcg bid and montelukast.

What is the most appropriate next step in management?

○ **Add aminophylline**
○ **Replace salmeterol with formoterol**
● **Daily oral steroids**
○ **Increase beclomethasone dose to 80mcg**
○ **Replace beclomethasone with fluticasone**

Description

Stepwise stable management (NICE guidelines 2017)

- Short-acting beta2 agonist (SABA) as reliever therapy
- Add low dose of ICS (inhaled corticosteroids) as the first-line maintenance therapy for continuous symptoms
- If uncontrolled add long-acting beta2 agonist (LABA) and a trial of adding LTRA (Leukotriene antagonists) to low dose ICS
- If uncontrolled switch ICS and LABA maintenance therapy to a MART regimen (Maintenance and reliever therapy is a single inhaler containing both ICS and a fast-acting LABA as formoterol)
- If uncontrolled increase the ICS to a moderate maintenance dose
- If uncontrolled increase the ICS to a high maintenance dose and trial of an additional drug as LAMA (long-acting muscarinic receptor antagonist) or theophylline

Session Statistics

Answered: 102 | **Correct**: 21 | **Incorrect**: 81 | **Average Score**: 20.59

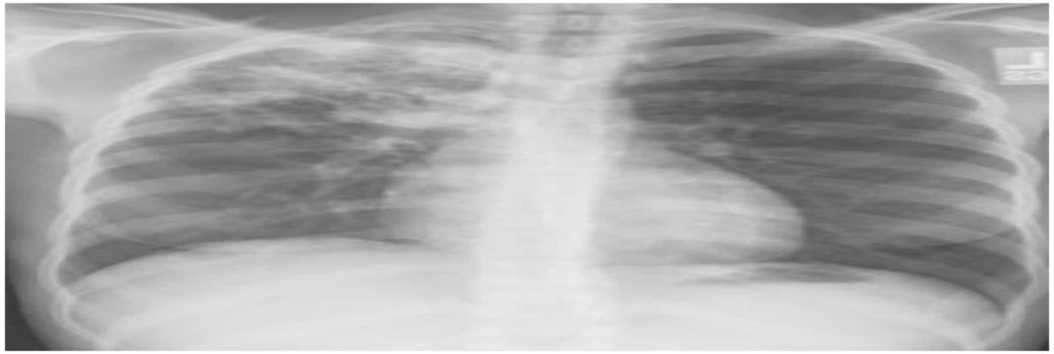
Question 104 of 231

Question Difficulty: **Easy**

Mr. X is complaining of 3 months history of persistent cough with blood stained mucus, fever, night sweats and weight loss.

Examination shows body mass index of 17; he is pyrexial at 37.5 C. Auscultation reveals right upper lobe crackles. Sputum microscopy was negative. CXR is shown in the image. CBC shows:

Hemoglobin	11 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 X10 ^{9} /L	(4.5-11.0 x 10 ^{9} /L)
Platelets	190 million/mm3	(150-450 million/mm3)
Eosinophils	0.02 X10 ^{9} /L	(0.01-0.03 x 10 ^{9} /L)



What is the most likely diagnosis?

○ **Bronchial carcinoma**
○ **Para neoplastic syndrome**
○ **Chronic bronchitis**
○ **Tuberculosis**
● **Cryptogenic fibrosing alveolitis**

Description

The CXR shows areas of cavitation and lung fibrosis in the right upper lobe with the symptoms are consistent with TB which are:

- About 90% of those infected with M. tuberculosis are asymptomatic, latent TB infections with only a 10% chance of progress to active tuberculous disease
- The classic symptoms of active TB infection are a chronic cough with blood-tinged sputum, fever, night sweats, and weight loss.
- The primary site of infection in the lungs, known as the "Ghon's focus", is generally located in either the upper part of the lower lobe, or

Question 105 of 231

Question Difficulty: **Hard**

42 Mr. X is complaining of 3-month history of recurrent hemoptysis, persistent cough with some malaise and weight loss. He had a past medical history of tuberculosis when aged 25 years. He was an ex-smoker who stopped 5 years ago and did not drink alcohol.

Physical examination was unremarkable. CXR shows an apical left sided cavity that contains a rounded mass within. Investigations show:

Hemoglobin	11 g/dL	(13.5-17.5 g/dL)
Mean corpuscular volume	75 fl	80-100 fl
Leukocyte count	7.5 10^9 /L	(4.5-11.0 x 10^9 /L)
Platelets	160 million/mm3	(150-450 million/mm3)
Lymphocytes	2.9 10^9 /L	(0.25-3.3 x 10^9 /L)
Eosinophils	0.2 10^9 /L	(0.01-0.4 x 10^9 /L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	89 µmol/L	(53-106 µmol/L)

Which of the following investigations would confirm the diagnosis?

Lymphocytes	2.9 10^9 /L	(0.25-3.3 x 10^9 /L)
Eosinophils	0.2 10^9 /L	(0.01-0.4 x 10^9 /L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	89 µmol/L	(53-106 µmol/L)

Which of the following investigations would confirm the diagnosis?

○ **pANCA**

○ **IgG precipitins**

○ **HRCT chest**

● **Sputum culture for TB**

○ **Lung biopsy**

Description

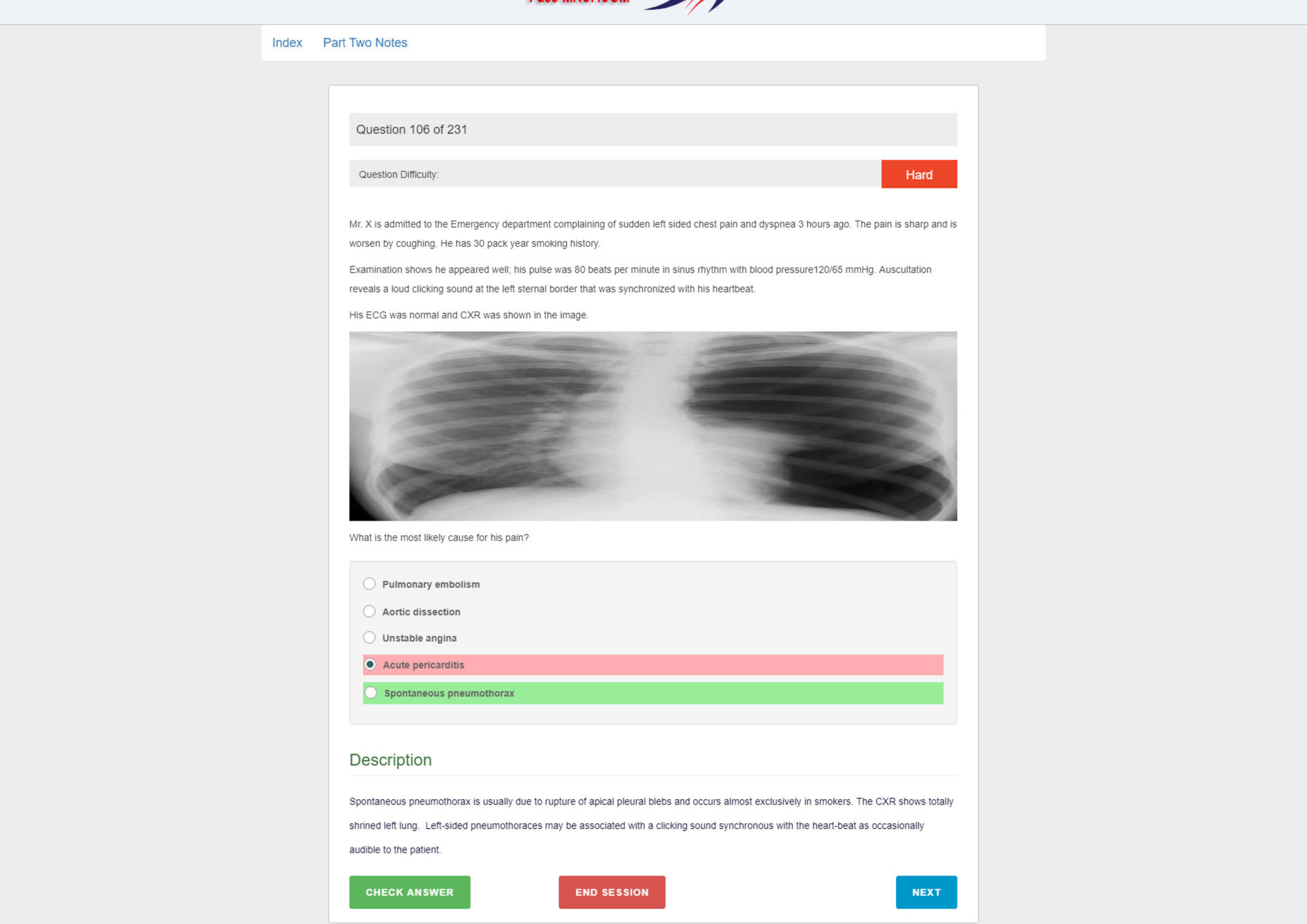
The CXR shows a ball within a cavity indicating aspergilloma as a diagnosis. Aspergilloma (mycetoma) is a fungus ball which colonizes on an existing lung cavity (TB, lung cancer or cystic fibrosis). It is usually asymptomatic but may cause cough and hemoptysis.

High titers IgG precipitins (present in 95% of cases) and sputum cultures for aspergillus are diagnostic.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 104 ✓ **Correct**: 21 ✕ **Incorrect**: 83 **Average Score**: 20.19 %



Index Part Two Notes

Question 106 of 231

Question Difficulty: **Hard**

Mr. X is admitted to the Emergency department complaining of sudden left sided chest pain and dyspnea 3 hours ago. The pain is sharp and is worsen by coughing. He has 30 pack year smoking history.

Examination shows he appeared well; his pulse was 80 beats per minute in sinus rhythm with blood pressure120/65 mmHg. Auscultation reveals a loud clicking sound at the left sternal border that was synchronized with his heartbeat.

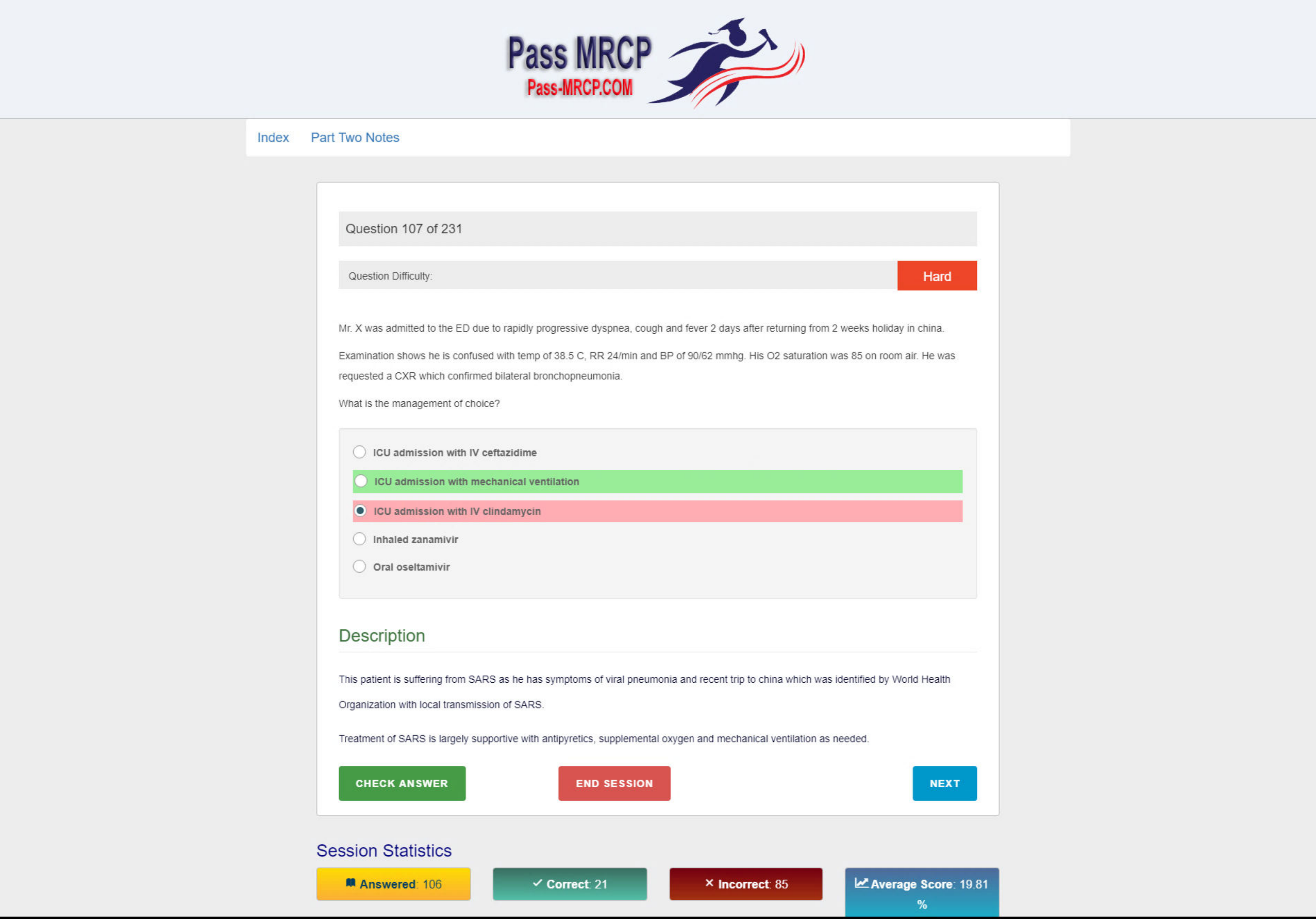
His ECG was normal and CXR was shown in the image.

What is the most likely cause for his pain?

- ○ **Pulmonary embolism**
- ○ **Aortic dissection**
- ○ **Unstable angina**
- ● **Acute pericarditis**
- ○ **Spontaneous pneumothorax**

Description

Spontaneous pneumothorax is usually due to rupture of apical pleural blebs and occurs almost exclusively in smokers. The CXR shows totally shrined left lung. Left-sided pneumothoraces may be associated with a clicking sound synchronous with the heart-beat as occasionally audible to the patient.



Question 107 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to rapidly progressive dyspnea, cough and fever 2 days after returning from 2 weeks holiday in china.

Examination shows he is confused with temp of 38.5 C, RR 24/min and BP of 90/62 mmhg. His O2 saturation was 85 on room air. He was requested a CXR which confirmed bilateral bronchopneumonia.

What is the management of choice?

- ○ **ICU admission with IV ceftazidime**
- ○ **ICU admission with mechanical ventilation**
- ● **ICU admission with IV clindamycin**
- ○ **Inhaled zanamivir**
- ○ **Oral oseltamivir**

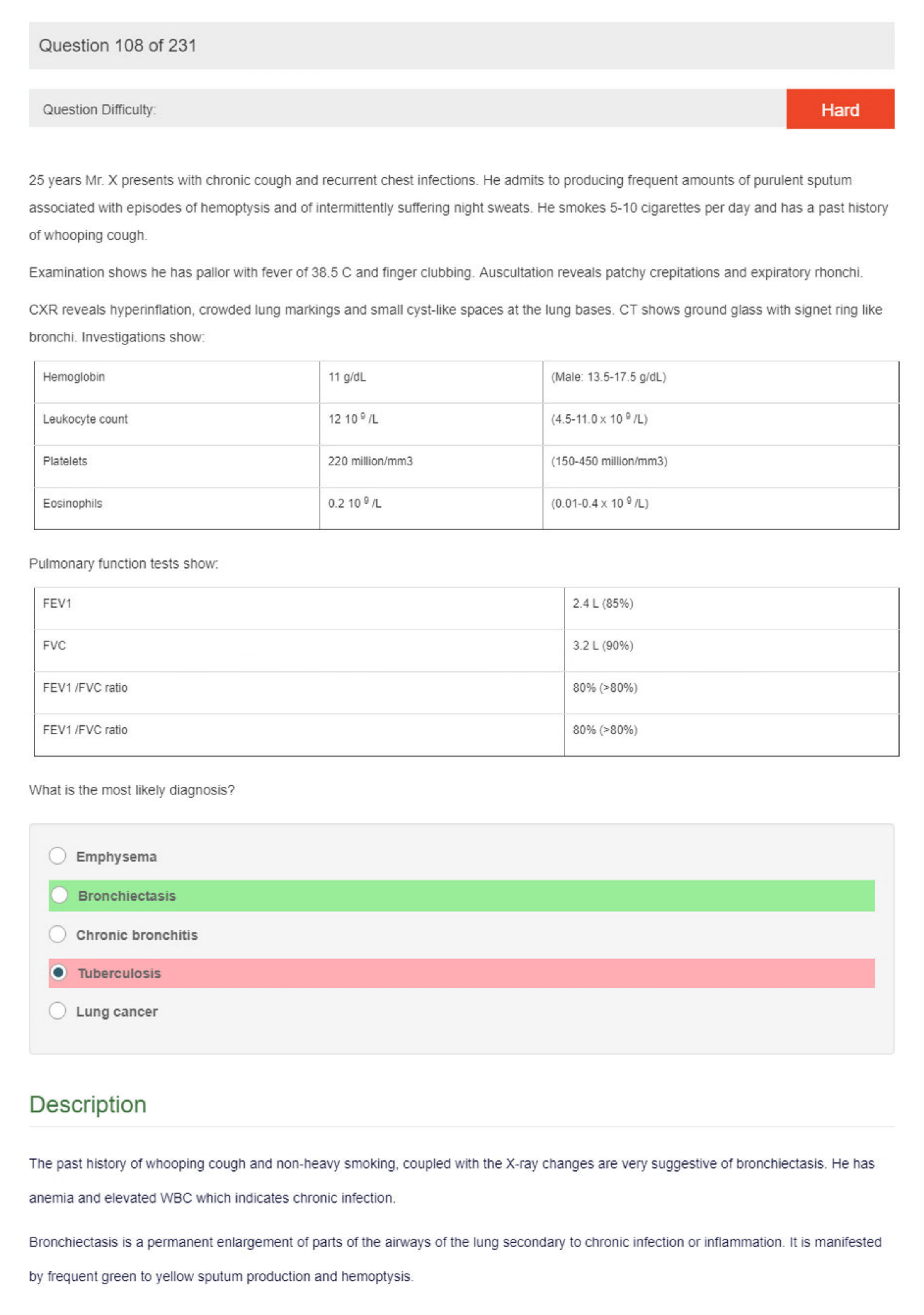
Description

This patient is suffering from SARS as he has symptoms of viral pneumonia and recent trip to china which was identified by World Health Organization with local transmission of SARS.

Treatment of SARS is largely supportive with antipyretics, supplemental oxygen and mechanical ventilation as needed.

Session Statistics

Answered: 106
✓ **Correct**: 21
✕ **Incorrect**: 85
Average Score: 19.81 %



Question 108 of 231

Question Difficulty: **Hard**

25 years Mr. X presents with chronic cough and recurrent chest infections. He admits to producing frequent amounts of purulent sputum associated with episodes of hemoptysis and of intermittently suffering night sweats. He smokes 5-10 cigarettes per day and has a past history of whooping cough.

Examination shows he has pallor with fever of 38.5 C and finger clubbing. Auscultation reveals patchy crepitations and expiratory rhonchi.

CXR reveals hyperinflation, crowded lung markings and small cyst-like spaces at the lung bases. CT shows ground glass with signet ring like bronchi. Investigations show:

Hemoglobin	11 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 10^9 /L	(4.5-11.0 x 10^9 /L)
Platelets	220 million/mm3	(150-450 million/mm3)
Eosinophils	0.2 10^9 /L	(0.01-0.4 x 10^9 /L)

Pulmonary function tests show:

FEV1	2.4 L (85%)
FVC	3.2 L (90%)
FEV1 /FVC ratio	80% (>80%)
FEV1 /FVC ratio	80% (>80%)

What is the most likely diagnosis?

○ **Emphysema**

○ **Bronchiectasis**

○ **Chronic bronchitis**

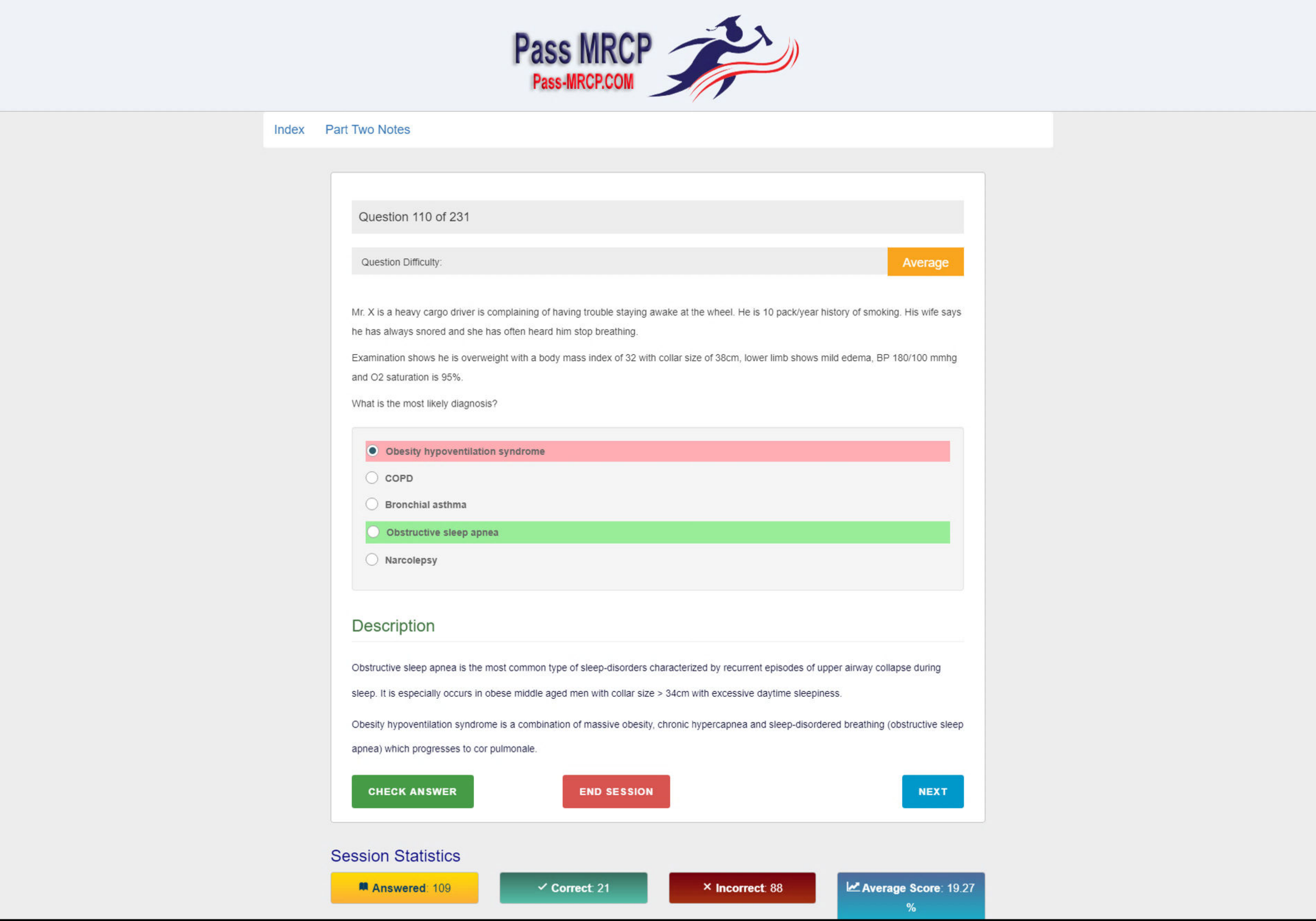
● **Tuberculosis**

○ **Lung cancer**

Description

The past history of whooping cough and non-heavy smoking, coupled with the X-ray changes are very suggestive of bronchiectasis. He has anemia and elevated WBC which indicates chronic infection.

Bronchiectasis is a permanent enlargement of parts of the airways of the lung secondary to chronic infection or inflammation. It is manifested by frequent green to yellow sputum production and hemoptysis.



Question 110 of 231

Question Difficulty: Average

Mr. X is a heavy cargo driver is complaining of having trouble staying awake at the wheel. He is 10 pack/year history of smoking. His wife says he has always snored and she has often heard him stop breathing.

Examination shows he is overweight with a body mass index of 32 with collar size of 38cm, lower limb shows mild edema, BP 180/100 mmhg and O2 saturation is 95%.

What is the most likely diagnosis?

- ● Obesity hypoventilation syndrome
- ○ COPD
- ○ Bronchial asthma
- ○ Obstructive sleep apnea
- ○ Narcolepsy

Description

Obstructive sleep apnea is the most common type of sleep-disorders characterized by recurrent episodes of upper airway collapse during sleep. It is especially occurs in obese middle aged men with collar size > 34cm with excessive daytime sleepiness.

Obesity hypoventilation syndrome is a combination of massive obesity, chronic hypercapnea and sleep-disordered breathing (obstructive sleep apnea) which progresses to cor pulmonale.

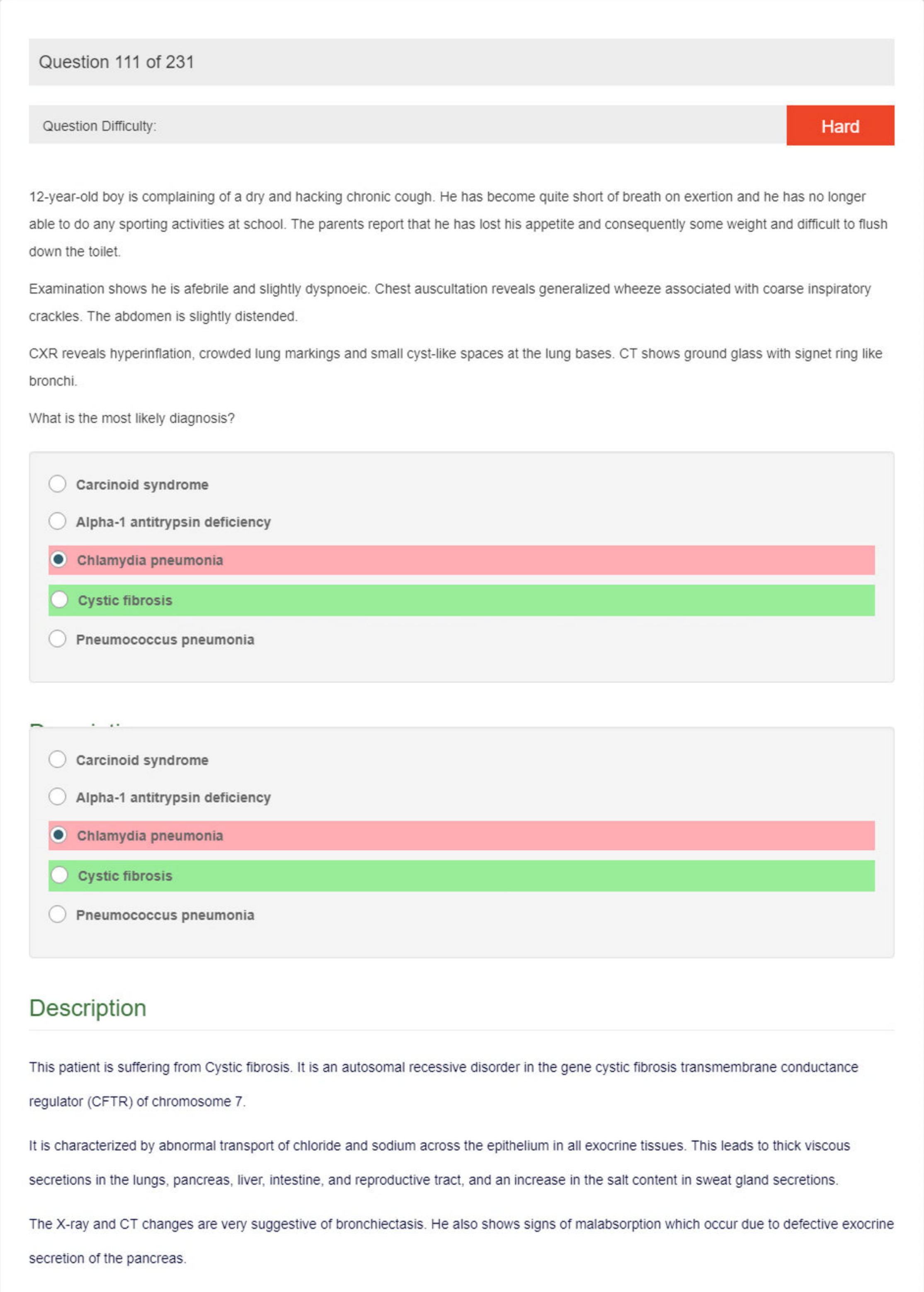
Session Statistics

Answered: 109

✓ Correct: 21

✕ Incorrect: 88

Average Score: 19.27 %



Question 111 of 231

Question Difficulty: **Hard**

12-year-old boy is complaining of a dry and hacking chronic cough. He has become quite short of breath on exertion and he has no longer able to do any sporting activities at school. The parents report that he has lost his appetite and consequently some weight and difficult to flush down the toilet.

Examination shows he is afebrile and slightly dyspnoeic. Chest auscultation reveals generalized wheeze associated with coarse inspiratory crackles. The abdomen is slightly distended.

CXR reveals hyperinflation, crowded lung markings and small cyst-like spaces at the lung bases. CT shows ground glass with signet ring like bronchi.

What is the most likely diagnosis?

- ○ **Carcinoid syndrome**
- ○ **Alpha-1 antitrypsin deficiency**
- ● **Chlamydia pneumonia**
- ○ **Cystic fibrosis**
- ○ **Pneumococcus pneumonia**

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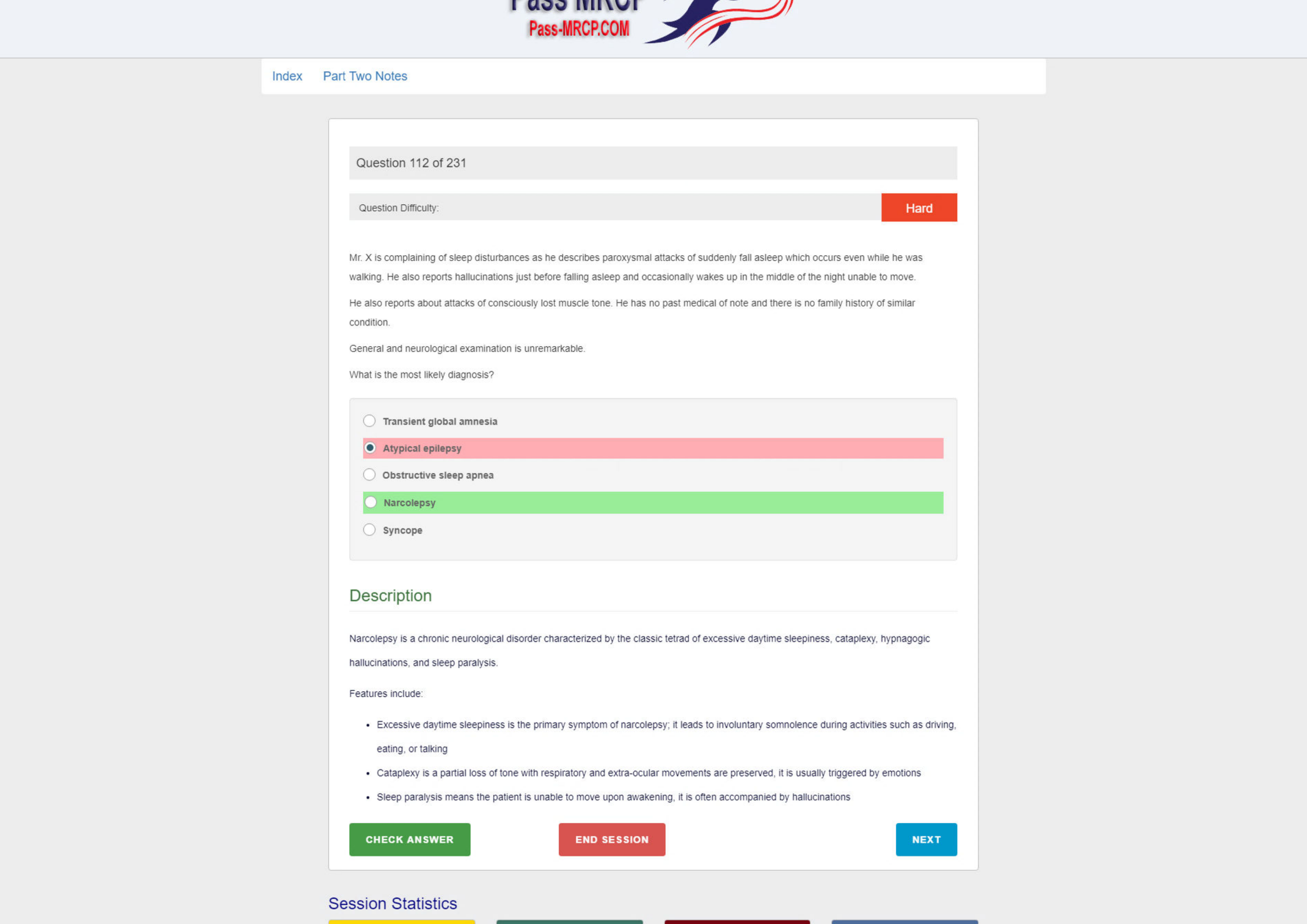
- ○ **Alpha-1 antitrypsin deficiency**
- ● **Chlamydia pneumonia**
- ○ **Cystic fibrosis**
- ○ **Pneumococcus pneumonia**

Description

This patient is suffering from Cystic fibrosis. It is an autosomal recessive disorder in the gene cystic fibrosis transmembrane conductance regulator (CFTR) of chromosome 7.

It is characterized by abnormal transport of chloride and sodium across the epithelium in all exocrine tissues. This leads to thick viscous secretions in the lungs, pancreas, liver, intestine, and reproductive tract, and an increase in the salt content in sweat gland secretions.

The X-ray and CT changes are very suggestive of bronchiectasis. He also shows signs of malabsorption which occur due to defective exocrine secretion of the pancreas.



Question 112 of 231

Question Difficulty: **Hard**

Mr. X is complaining of sleep disturbances as he describes paroxysmal attacks of suddenly fall asleep which occurs even while he was walking. He also reports hallucinations just before falling asleep and occasionally wakes up in the middle of the night unable to move.

He also reports about attacks of consciously lost muscle tone. He has no past medical of note and there is no family history of similar condition.

General and neurological examination is unremarkable.

What is the most likely diagnosis?

○ **Transient global amnesia**

● **Atypical epilepsy** 🟥

○ **Obstructive sleep apnea**

○ **Narcolepsy** 🟩

○ **Syncope**

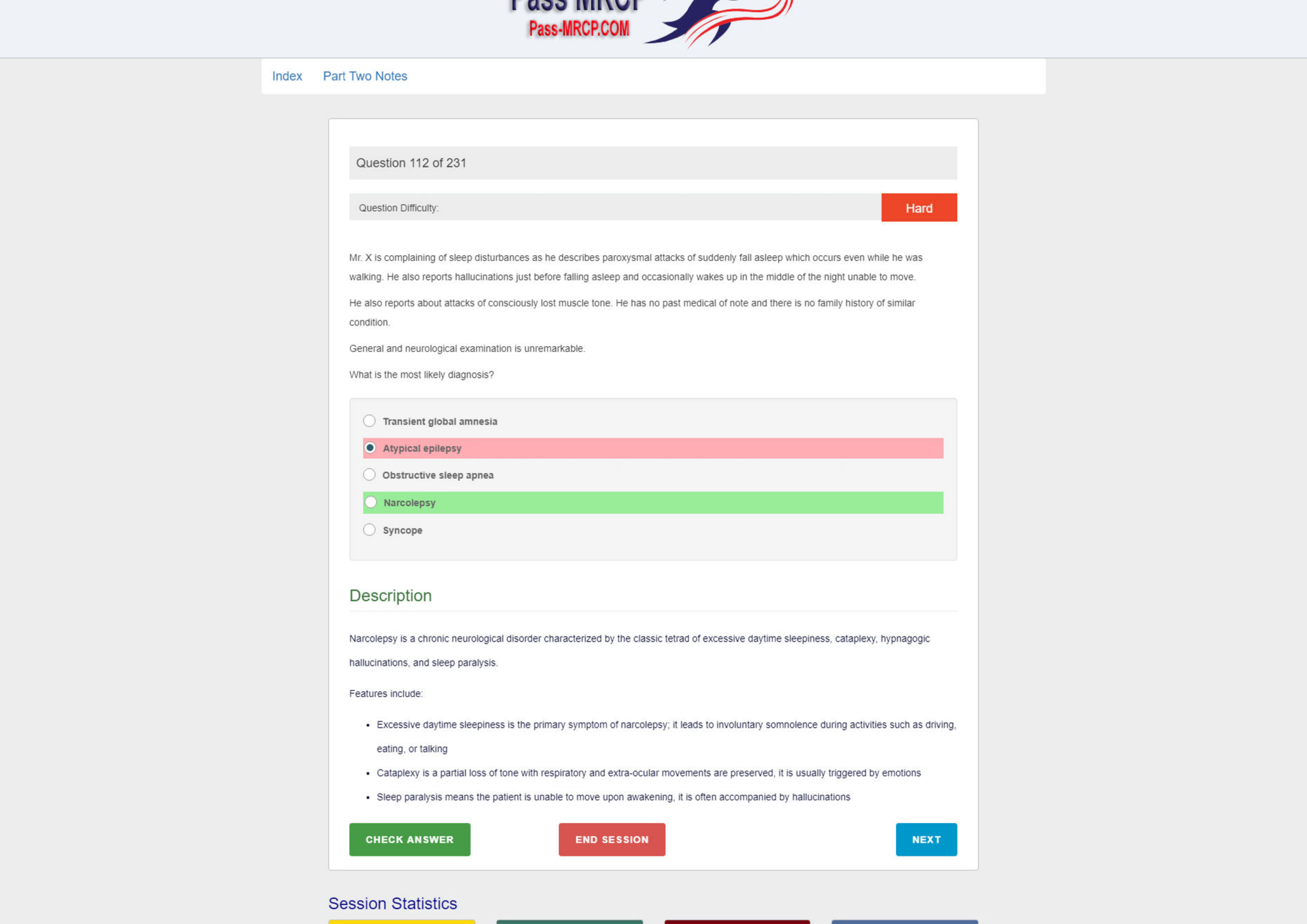
Description

Narcolepsy is a chronic neurological disorder characterized by the classic tetrad of excessive daytime sleepiness, cataplexy, hypnagogic hallucinations, and sleep paralysis.

Features include:

- Excessive daytime sleepiness is the primary symptom of narcolepsy; it leads to involuntary somnolence during activities such as driving, eating, or talking
- Cataplexy is a partial loss of tone with respiratory and extra-ocular movements are preserved, it is usually triggered by emotions
- Sleep paralysis means the patient is unable to move upon awakening, it is often accompanied by hallucinations

Session Statistics



Question 112 of 231

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○ **Narcolepsy**
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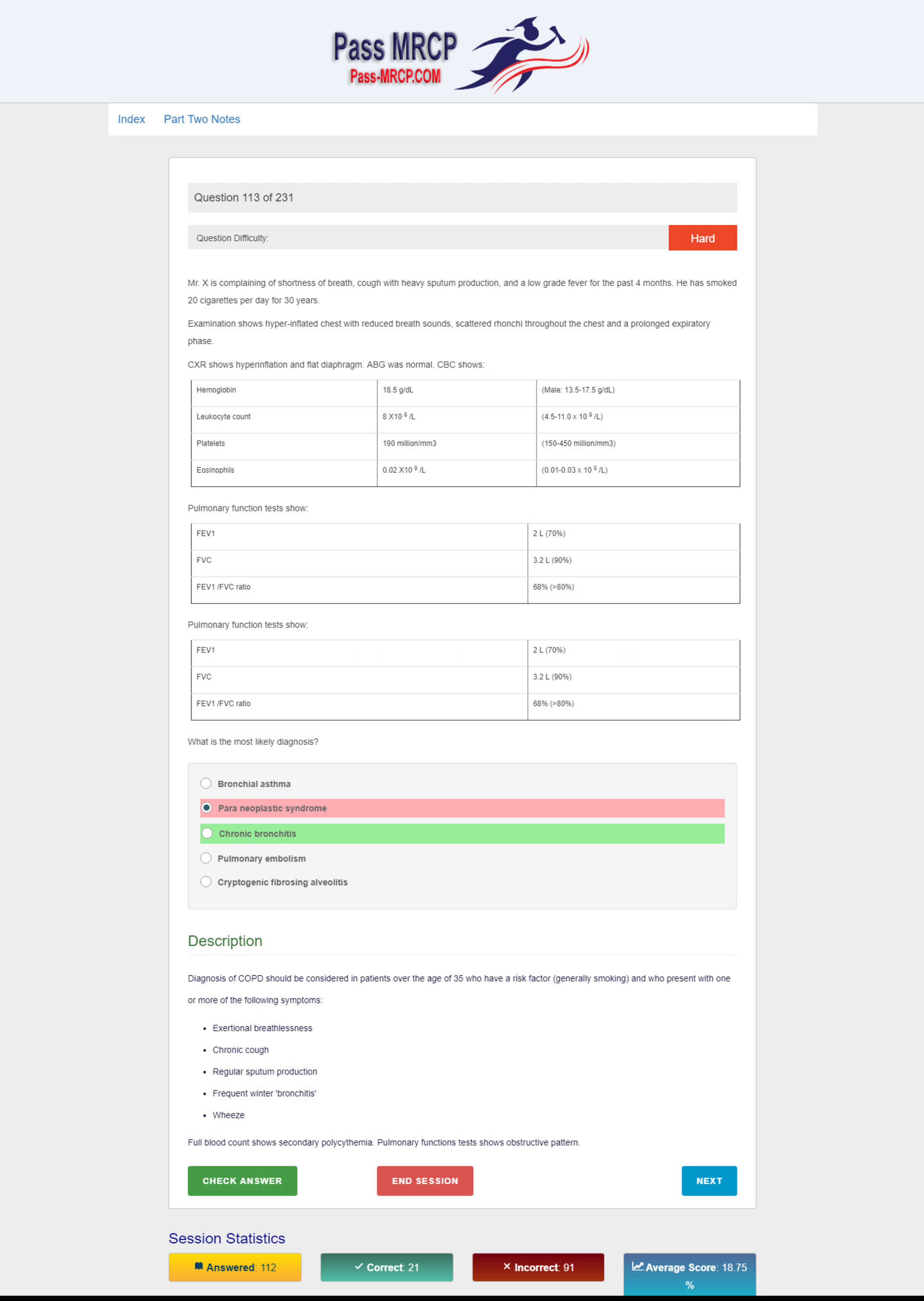
Session Statistics



Question 113 of 231

Question Difficulty: **Hard**

Mr. X is complaining of shortness of breath, cough with heavy sputum production, and a low grade fever for the past 4 months. He has smoked 20 cigarettes per day for 30 years.

Examination shows hyper-inflated chest with reduced breath sounds, scattered rhonchi throughout the chest and a prolonged expiratory phase.

CXR shows hyperinflation and flat diaphragm. ABG was normal. CBC shows:

Hemoglobin	18.5 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 X10 ^{9} /L	(4.5-11.0 x 10 ^{9} /L)
Platelets	190 million/mm3	(150-450 million/mm3)
Eosinophils	0.02 X10 ^{9} /L	(0.01-0.03 x 10 ^{9} /L)

Pulmonary function tests show:

FEV1	2 L (70%)
FVC	3.2 L (90%)
FEV1 /FVC ratio	68% (>80%)

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What is the most likely diagnosis?

○ **Bronchial asthma**
● **Para neoplastic syndrome**
○ **Chronic bronchitis**
○ **Pulmonary embolism**
○ **Cryptogenic fibrosing alveolitis**

Description

Diagnosis of COPD should be considered in patients over the age of 35 who have a risk factor (generally smoking) and who present with one or more of the following symptoms:

- Exertional breathlessness
- Chronic cough
- Regular sputum production
- Frequent winter 'bronchitis'
- Wheeze

Full blood count shows secondary polycythemia. Pulmonary functions tests shows obstructive pattern.

Session Statistics

Answered: 112 **Correct**: 21 **Incorrect**: 91 **Average Score**: 18.75 %

Question 113 of 231

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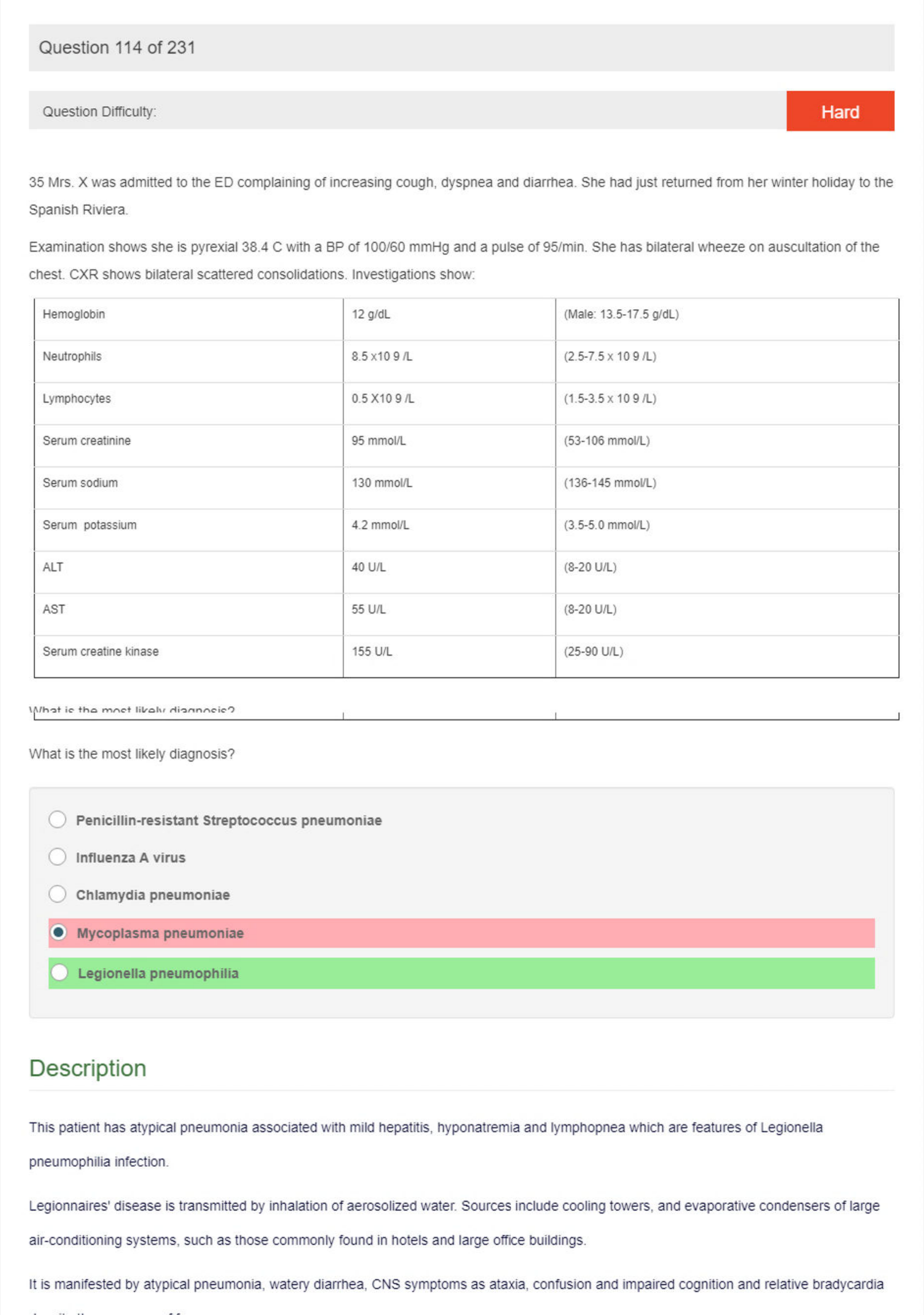
CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 112 ✓ **Correct**: 21 ✕ **Incorrect**: 91 **Average Score**: 18.75 %



Question 114 of 231

35 Mrs. X was admitted to the ED complaining of increasing cough, dyspnea and diarrhea. She had just returned from her winter holiday to the Spanish Riviera.

Examination shows she is pyrexial 38.4 C with a BP of 100/60 mmHg and a pulse of 95/min. She has bilateral wheeze on auscultation of the chest. CXR shows bilateral scattered consolidations. Investigations show:

Hemoglobin	12 g/dL	(Male: 13.5-17.5 g/dL)
Neutrophils	8.5 x10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.5 X10 9 /L	(1.5-3.5 x 10 9 /L)
Serum creatinine	95 mmol/L	(53-106 mmol/L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)
Serum creatine kinase	155 U/L	(25-90 U/L)

What is the most likely diagnosis?

○ **Penicillin-resistant Streptococcus pneumoniae**

○ **Influenza A virus**

○ **Chlamydia pneumoniae**

● **Mycoplasma pneumoniae**

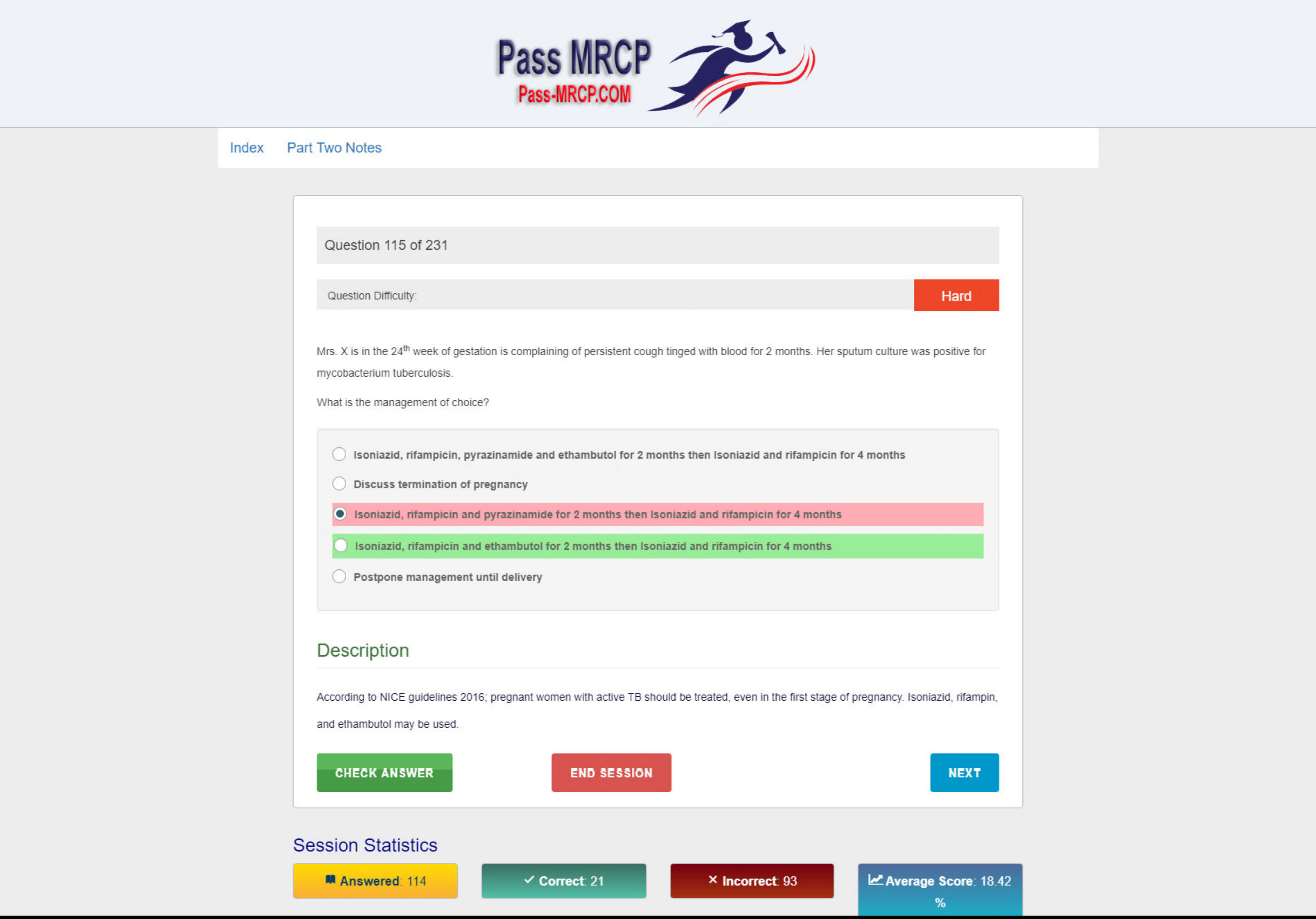
○ **Legionella pneumophilia**

Description

This patient has atypical pneumonia associated with mild hepatitis, hyponatremia and lymphopnea which are features of Legionella pneumophilia infection.

Legionnaires' disease is transmitted by inhalation of aerosolized water. Sources include cooling towers, and evaporative condensers of large air-conditioning systems, such as those commonly found in hotels and large office buildings.

It is manifested by atypical pneumonia, watery diarrhea, CNS symptoms as ataxia, confusion and impaired cognition and relative bradycardia



Question 115 of 231

Question Difficulty: **Hard**

Mrs. X is in the 24th week of gestation is complaining of persistent cough tinged with blood for 2 months. Her sputum culture was positive for mycobacterium tuberculosis.

What is the management of choice?

- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 4 months**
- ○ **Discuss termination of pregnancy**
- ● **Isoniazid, rifampicin and pyrazinamide for 2 months then Isoniazid and rifampicin for 4 months**
- ○ **Isoniazid, rifampicin and ethambutol for 2 months then Isoniazid and rifampicin for 4 months**
- ○ **Postpone management until delivery**

Description

According to NICE guidelines 2016; pregnant women with active TB should be treated, even in the first stage of pregnancy. Isoniazid, rifampin, and ethambutol may be used.

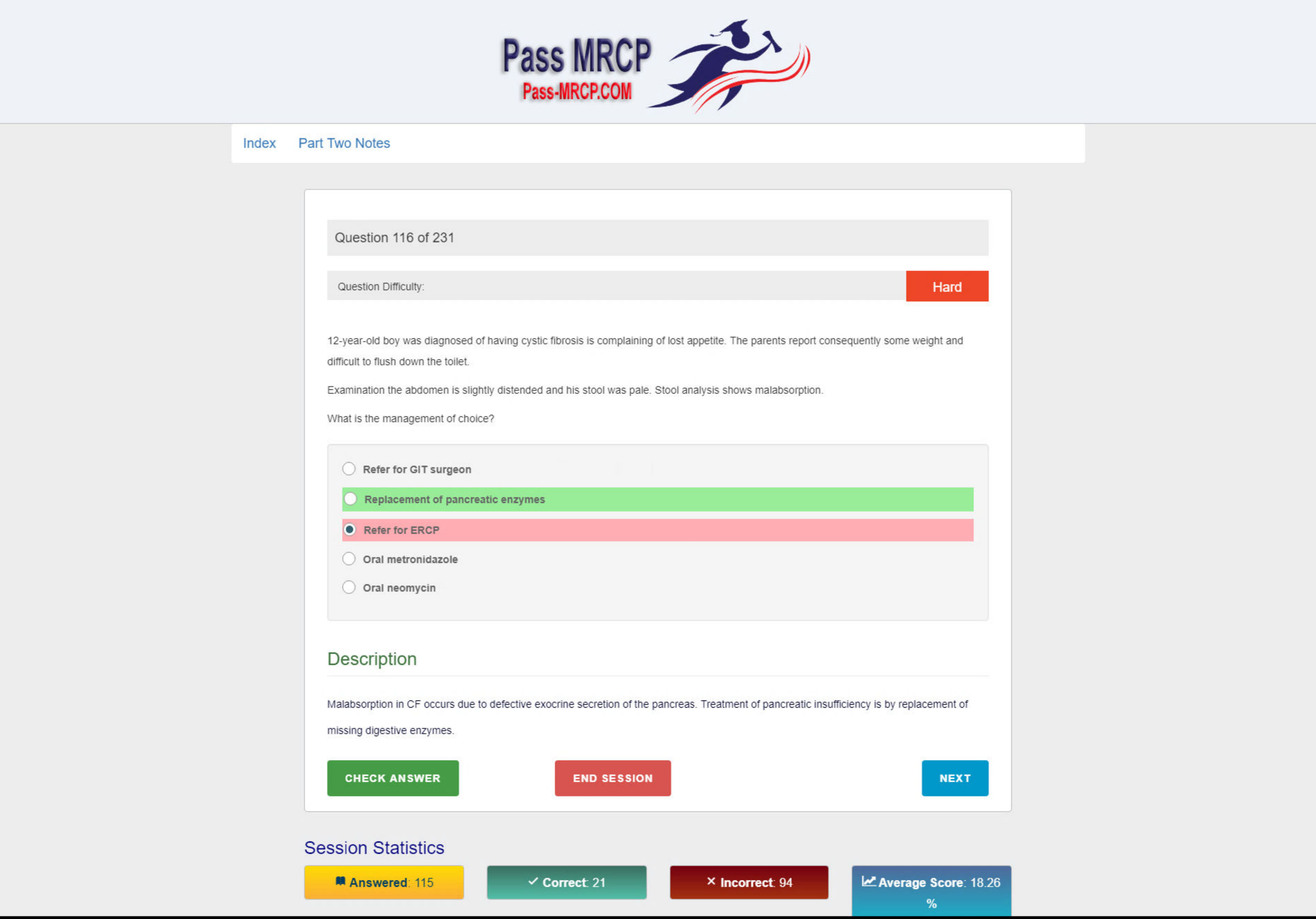
Session Statistics

Answered: 114

✓ **Correct**: 21

✕ **Incorrect**: 93

Average Score: 18.42 %



Question 116 of 231

Question Difficulty: **Hard**

12-year-old boy was diagnosed of having cystic fibrosis is complaining of lost appetite. The parents report consequently some weight and difficult to flush down the toilet.

Examination the abdomen is slightly distended and his stool was pale. Stool analysis shows malabsorption.

What is the management of choice?

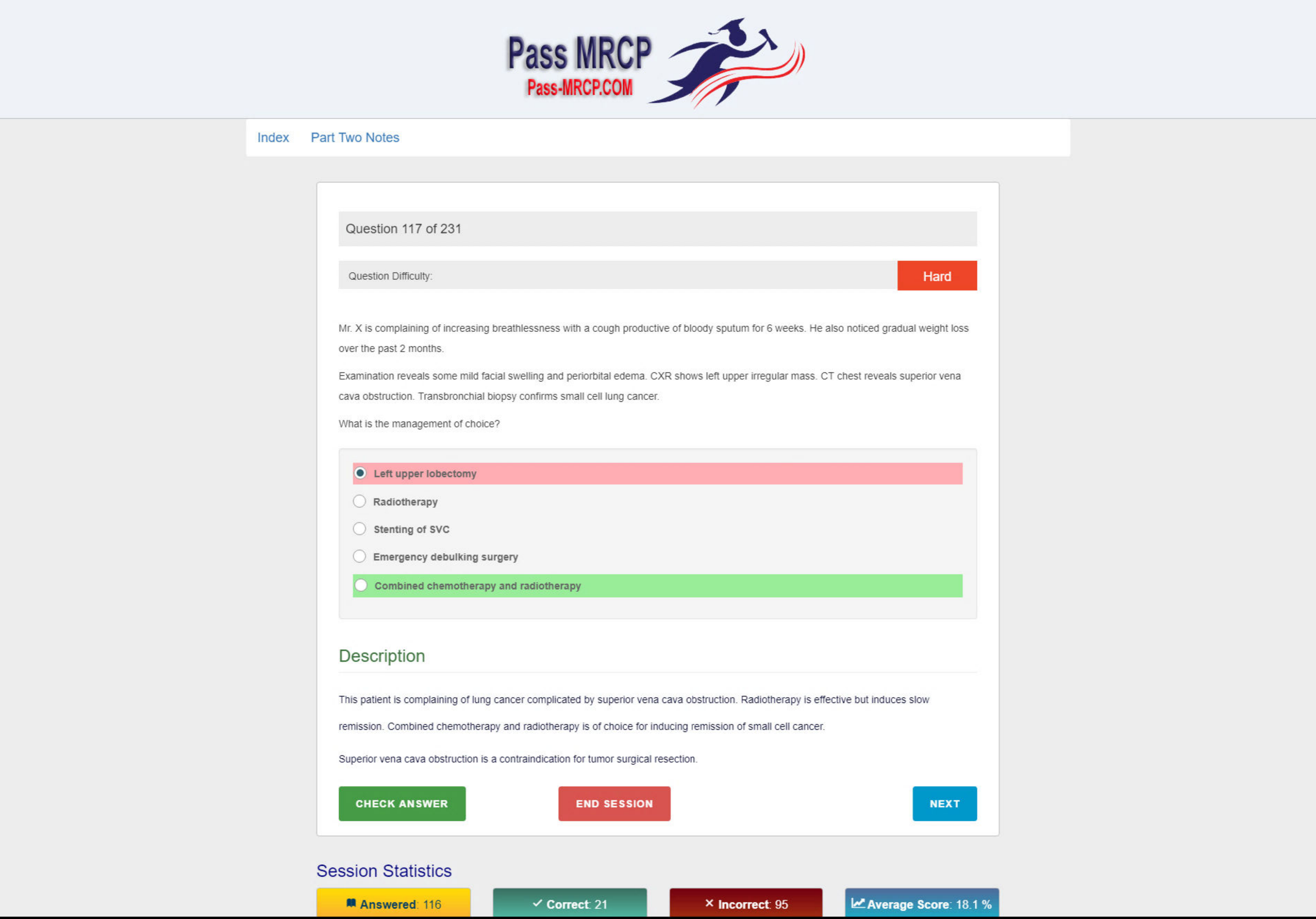
○ **Refer for GIT surgeon**
○ **Replacement of pancreatic enzymes**
● **Refer for ERCP**
○ **Oral metronidazole**
○ **Oral neomycin**

Description

Malabsorption in CF occurs due to defective exocrine secretion of the pancreas. Treatment of pancreatic insufficiency is by replacement of missing digestive enzymes.

Session Statistics

Answered: 115
✓ **Correct**: 21
✕ **Incorrect**: 94
Average Score: 18.26 %



Question 117 of 231

Question Difficulty: Hard

Mr. X is complaining of increasing breathlessness with a cough productive of bloody sputum for 6 weeks. He also noticed gradual weight loss over the past 2 months.

Examination reveals some mild facial swelling and periorbital edema. CXR shows left upper irregular mass. CT chest reveals superior vena cava obstruction. Transbronchial biopsy confirms small cell lung cancer.

What is the management of choice?

- ● Left upper lobectomy
- ○ Radiotherapy
- ○ Stenting of SVC
- ○ Emergency debulking surgery
- ○ Combined chemotherapy and radiotherapy

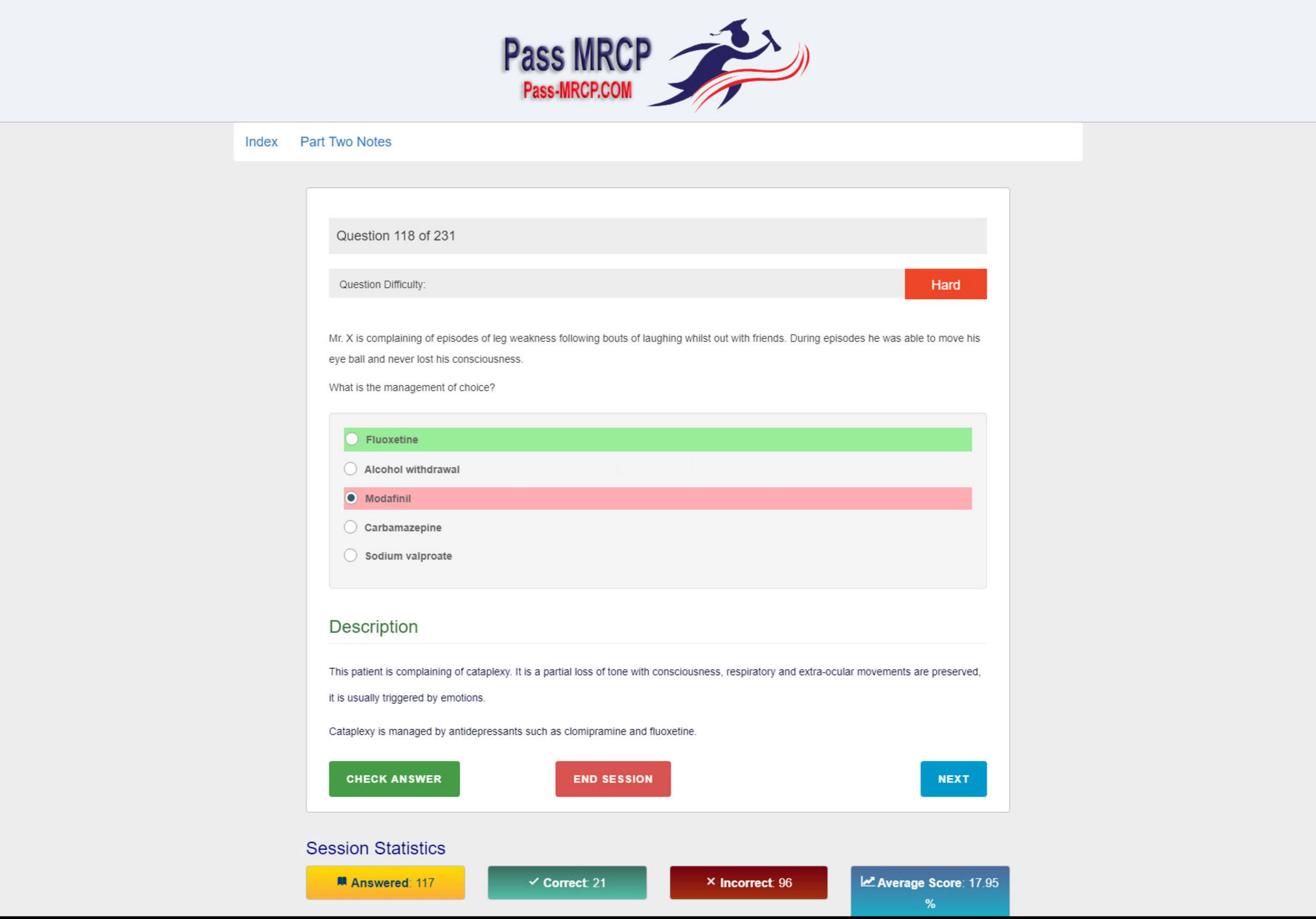
Description

This patient is complaining of lung cancer complicated by superior vena cava obstruction. Radiotherapy is effective but induces slow remission. Combined chemotherapy and radiotherapy is of choice for inducing remission of small cell cancer.

Superior vena cava obstruction is a contraindication for tumor surgical resection.

Session Statistics

Answered: 116
✓ **Correct**: 21
✕ **Incorrect**: 95
Average Score: 18.1 %



Question 118 of 231

Question Difficulty: **Hard**

Mr. X is complaining of episodes of leg weakness following bouts of laughing whilst out with friends. During episodes he was able to move his eye ball and never lost his consciousness.

What is the management of choice?

- ○ **Fluoxetine**
- ○ **Alcohol withdrawal**
- ● **Modafinil**
- ○ **Carbamazepine**
- ○ **Sodium valproate**

Description

This patient is complaining of cataplexy. It is a partial loss of tone with consciousness, respiratory and extra-ocular movements are preserved, it is usually triggered by emotions.

Cataplexy is managed by antidepressants such as clomipramine and fluoxetine.

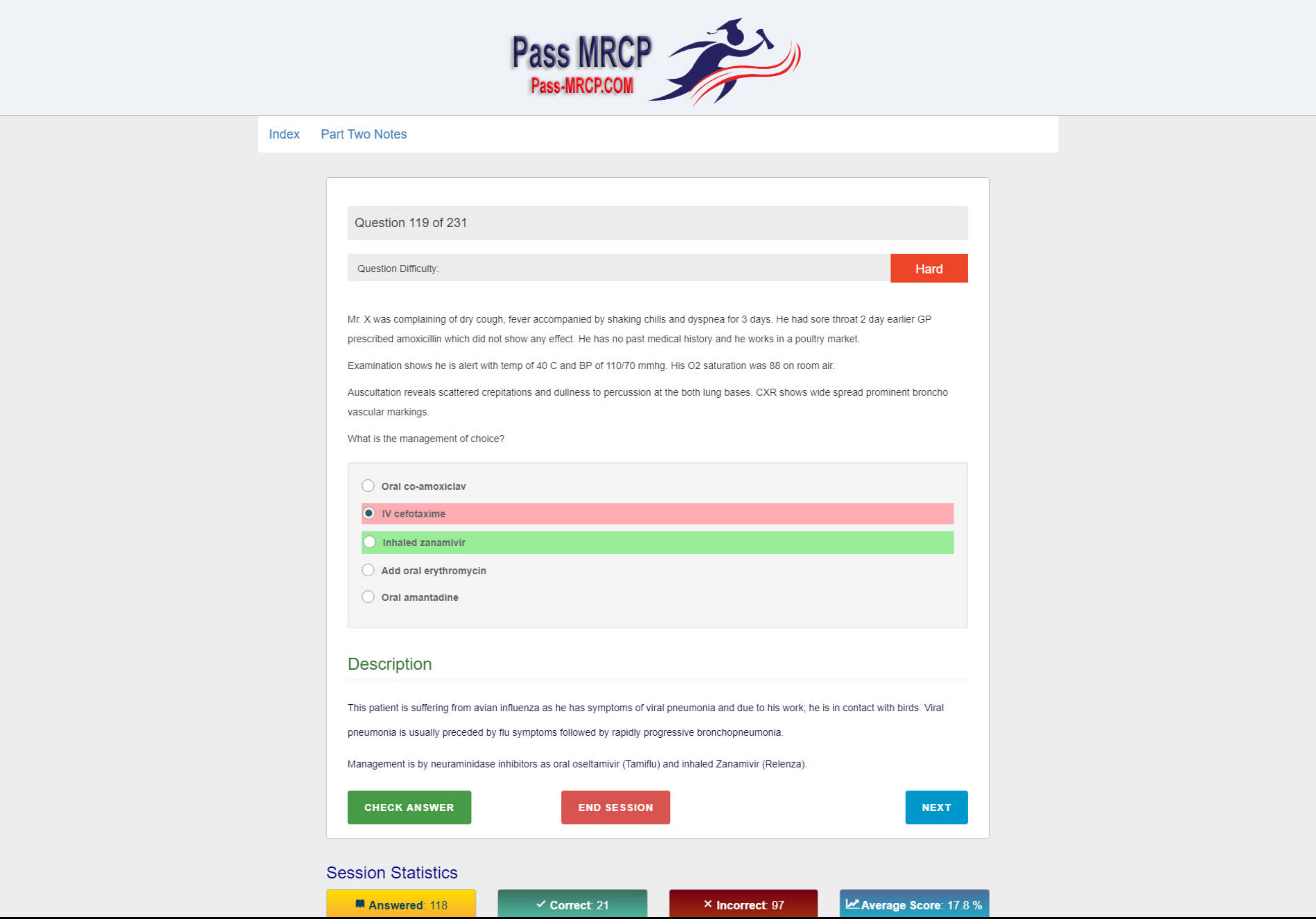
Session Statistics

Answered: 117

✓ **Correct**: 21

× **Incorrect**: 96

Average Score: 17.95 %



Question 119 of 231

Question Difficulty: **Hard**

Mr. X was complaining of dry cough, fever accompanied by shaking chills and dyspnea for 3 days. He had sore throat 2 day earlier GP prescribed amoxicillin which did not show any effect. He has no past medical history and he works in a poultry market.

Examination shows he is alert with temp of 40 C and BP of 110/70 mmhg. His O2 saturation was 88 on room air.

Auscultation reveals scattered crepitations and dullness to percussion at the both lung bases. CXR shows wide spread prominent broncho vascular markings.

What is the management of choice?

- ○ **Oral co-amoxiclav**
- ● **IV cefotaxime**
- ○ **Inhaled zanamivir**
- ○ **Add oral erythromycin**
- ○ **Oral amantadine**

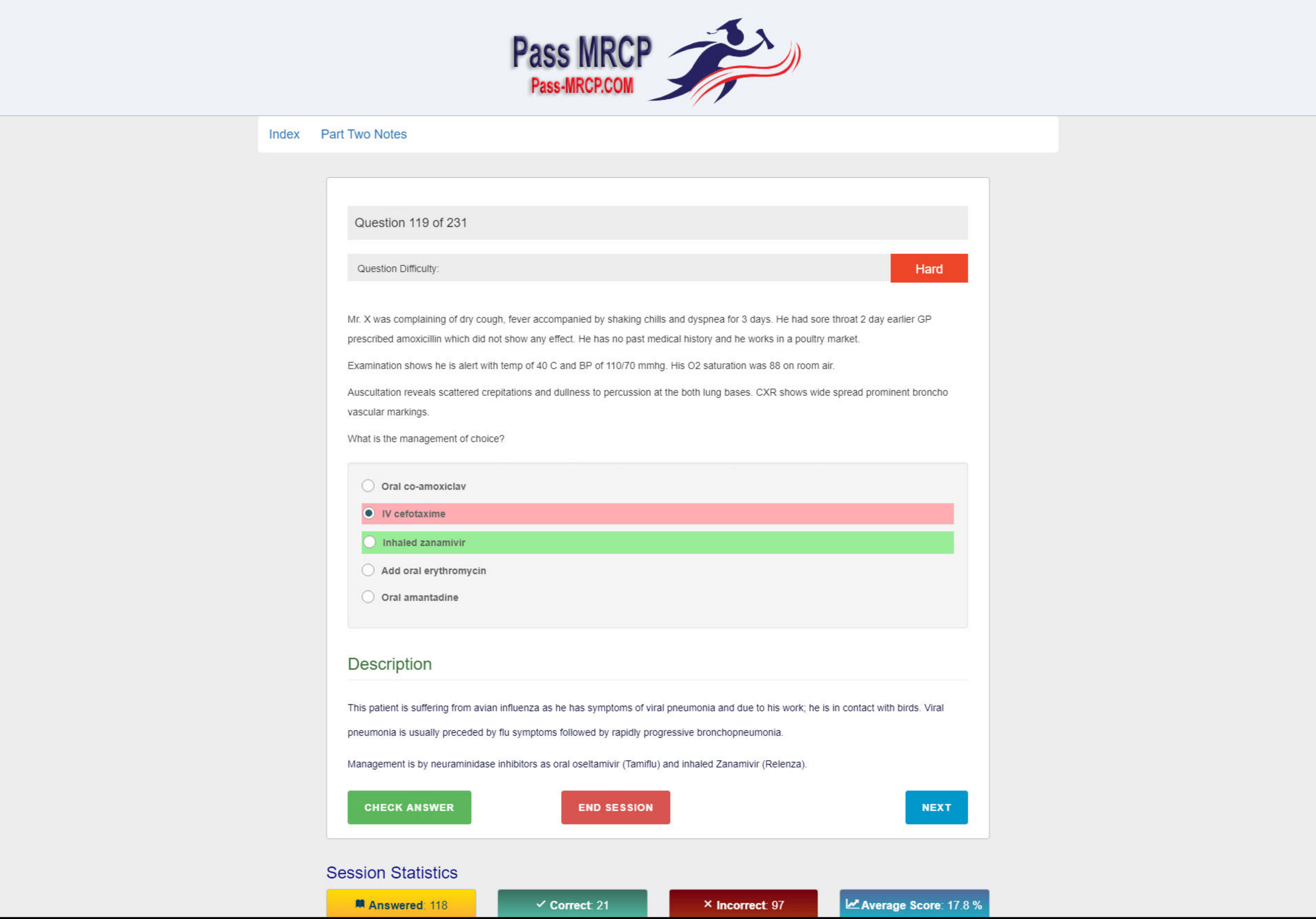
Description

This patient is suffering from avian influenza as he has symptoms of viral pneumonia and due to his work; he is in contact with birds. Viral pneumonia is usually preceded by flu symptoms followed by rapidly progressive bronchopneumonia.

Management is by neuraminidase inhibitors as oral oseltamivir (Tamiflu) and inhaled Zanamivir (Relenza).

Session Statistics

Answered: 118
Correct: 21
Incorrect: 97
Average Score: 17.8 %



Question 119 of 231

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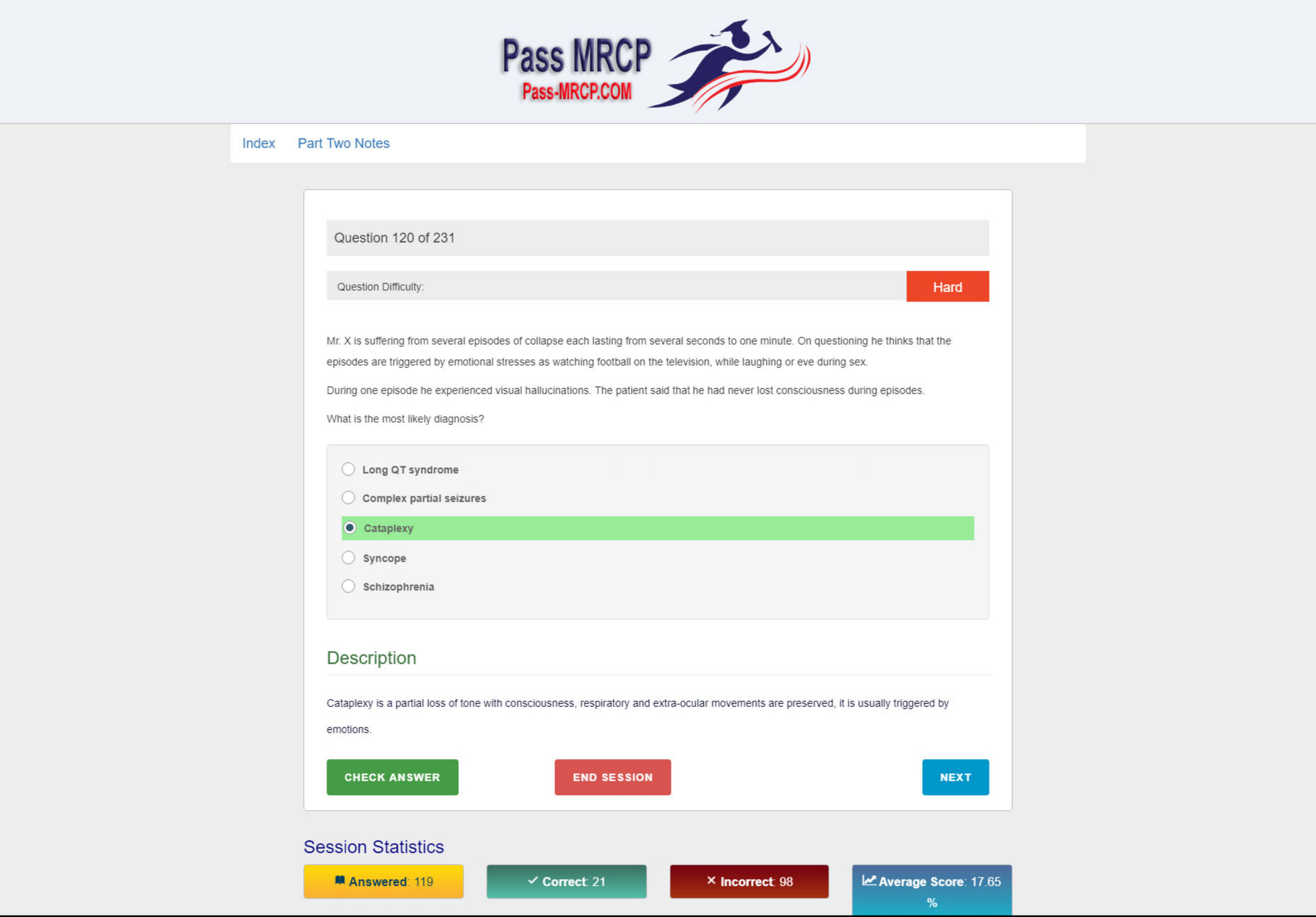
Session Statistics

Answered: 118
Correct: 21
Incorrect: 97
Average Score: 17.8 %



Question 120 of 231

Question Difficulty: **Hard**

Mr. X is suffering from several episodes of collapse each lasting from several seconds to one minute. On questioning he thinks that the episodes are triggered by emotional stresses as watching football on the television, while laughing or eve during sex.

During one episode he experienced visual hallucinations. The patient said that he had never lost consciousness during episodes.

What is the most likely diagnosis?

- ○ **Long QT syndrome**
- ○ **Complex partial seizures**
- ● **Cataplexy**
- ○ **Syncope**
- ○ **Schizophrenia**

Description

Cataplexy is a partial loss of tone with consciousness, respiratory and extra-ocular movements are preserved, it is usually triggered by emotions.

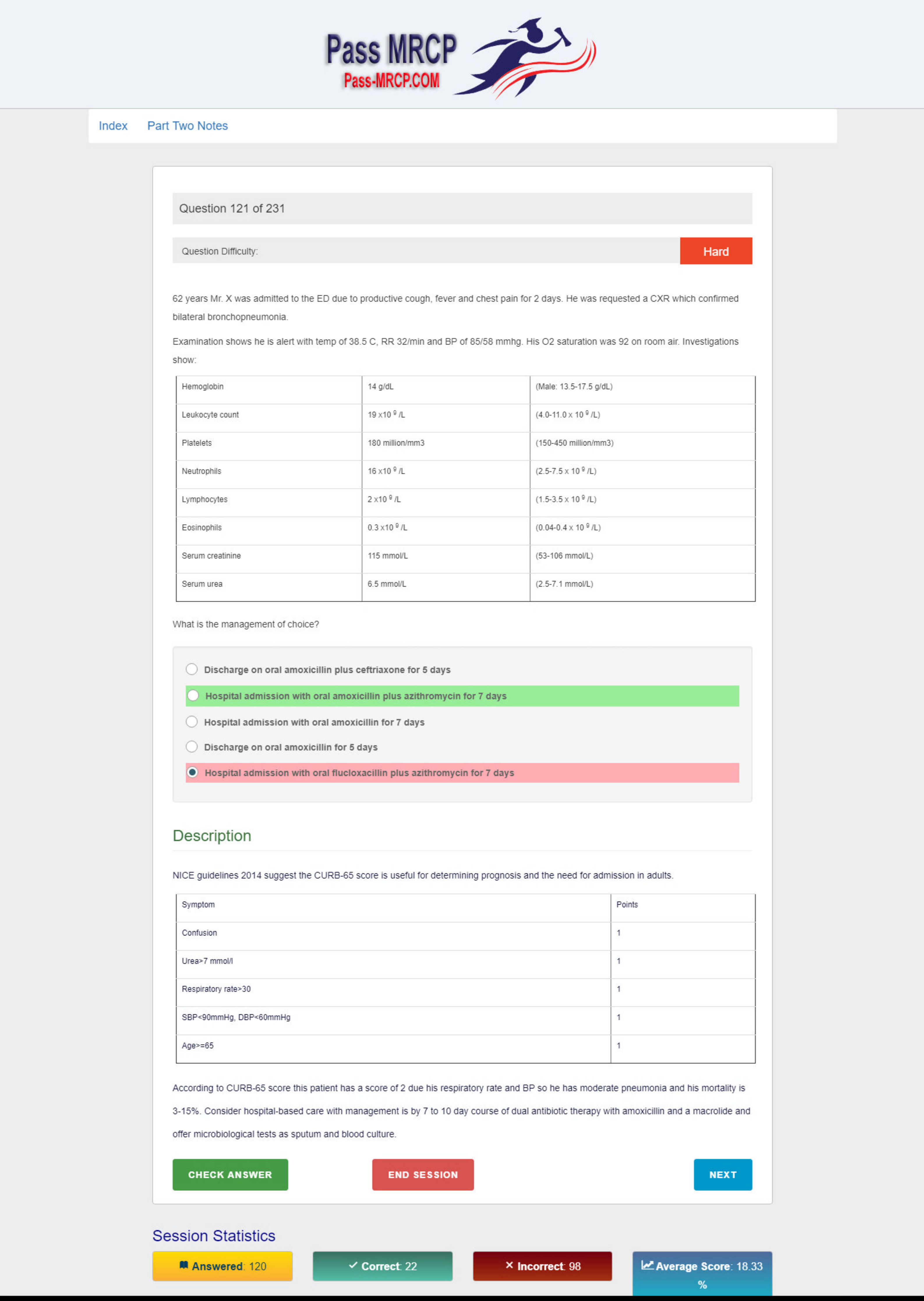
Session Statistics

Answered: 119

✓ **Correct**: 21

✕ **Incorrect**: 98

Average Score: 17.65 %



Question 121 of 231

Question Difficulty: Hard

62 years Mr. X was admitted to the ED due to productive cough, fever and chest pain for 2 days. He was requested a CXR which confirmed bilateral bronchopneumonia.

Examination shows he is alert with temp of 38.5 C, RR 32/min and BP of 85/58 mmhg. His O2 saturation was 92 on room air. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 x10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	2 x10^{9} /L	(1.5-3.5 x 10^{9} /L)
Eosinophils	0.3 x10^{9} /L	(0.04-0.4 x 10^{9} /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	6.5 mmol/L	(2.5-7.1 mmol/L)

What is the management of choice?

- ○ **Discharge on oral amoxicillin plus ceftriaxone for 5 days**
- ○ **Hospital admission with oral amoxicillin plus azithromycin for 7 days**
- ○ **Hospital admission with oral amoxicillin for 7 days**
- ○ **Discharge on oral amoxicillin for 5 days**
- ● **Hospital admission with oral flucloxacillin plus azithromycin for 7 days**

Description

NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1
Age>=65	1

According to CURB-65 score this patient has a score of 2 due his respiratory rate and BP so he has moderate pneumonia and his mortality is 3-15%. Consider hospital-based care with management is by 7 to 10 day course of dual antibiotic therapy with amoxicillin and a macrolide and offer microbiological tests as sputum and blood culture.

Session Statistics

Answered: 120

✓ **Correct**: 22

✕ **Incorrect**: 98

Average Score: 18.33 %

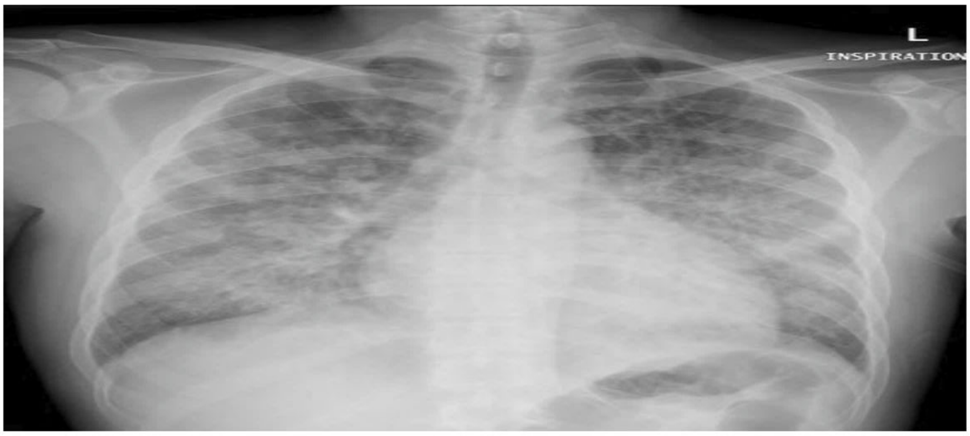
Question 122 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the Emergency department complaining of severe cough, fever and rigors. He also complains of progressive increasing shortness of breath on exertion over the past few days. He has no past medical history; he reports he is IV heroin abuser.

Examination reveals fever of 37.9 C, BP of 122/75 mmHg and O2 saturation was 96% at rest and 90% after walk test. Auscultation of the chest reveals mild crackles and wheeze. CXR is shown in the image. Investigations show:

Hemoglobin	13 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	190 million/mm3	(150-450 million/mm3)
Neutrophils	5 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.3 X10 9 /L	(1.5-3.5 x 10 9 /L)
Eosinophils	0.3 X10 9 /L	(0.04-0.4 x 10 9 /L)



What is the most likely diagnosis?

○ **Sarcoidosis**

○ **Staphylococcus aureus pneumonia**

○ **Tuberculosis**

○ **Klebsiella pneumoniae pneumonia**

● **Pneumocystis jiroveci pneumonia**

Description

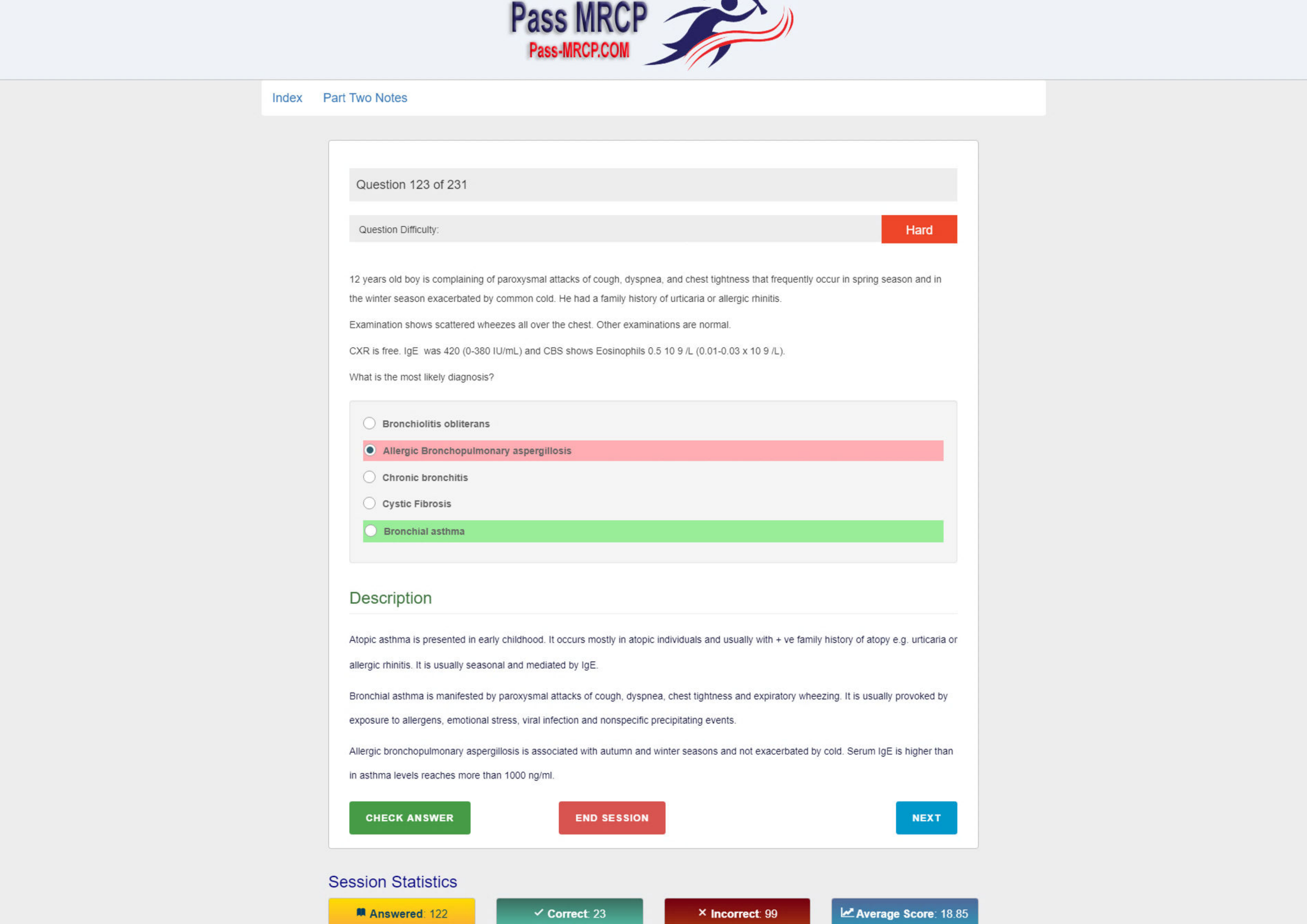
This patient has HIV complicated by pneumocystis pneumonia. Pneumocystis pneumonia is caused by the yeast-like fungus Pneumocystis jiroveci. It can cause a lung infection in people with a weak immune system (chemotherapy, HIV) causing diffuse interstitial infiltrates as in the image.

The risk of Pneumocystis jiroveci increases when CD4 positive T helper-cell level is < 200 cell/µl. O2 desaturation of after exertion is a characteristic sign.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 121 ✓ **Correct**: 22 ✕ **Incorrect**: 99 **Average Score**: 18.18 %



Index Part Two Notes

Question 123 of 231

Question Difficulty: **Hard**

12 years old boy is complaining of paroxysmal attacks of cough, dyspnea, and chest tightness that frequently occur in spring season and in the winter season exacerbated by common cold. He had a family history of urticaria or allergic rhinitis.

Examination shows scattered wheezes all over the chest. Other examinations are normal.

CXR is free. IgE was 420 (0-380 IU/mL) and CBS shows Eosinophils 0.5 10 9 /L (0.01-0.03 x 10 9 /L).

What is the most likely diagnosis?

- ○ **Bronchiolitis obliterans**
- ● **Allergic Bronchopulmonary aspergillosis**
- ○ **Chronic bronchitis**
- ○ **Cystic Fibrosis**
- ○ **Bronchial asthma**

Description

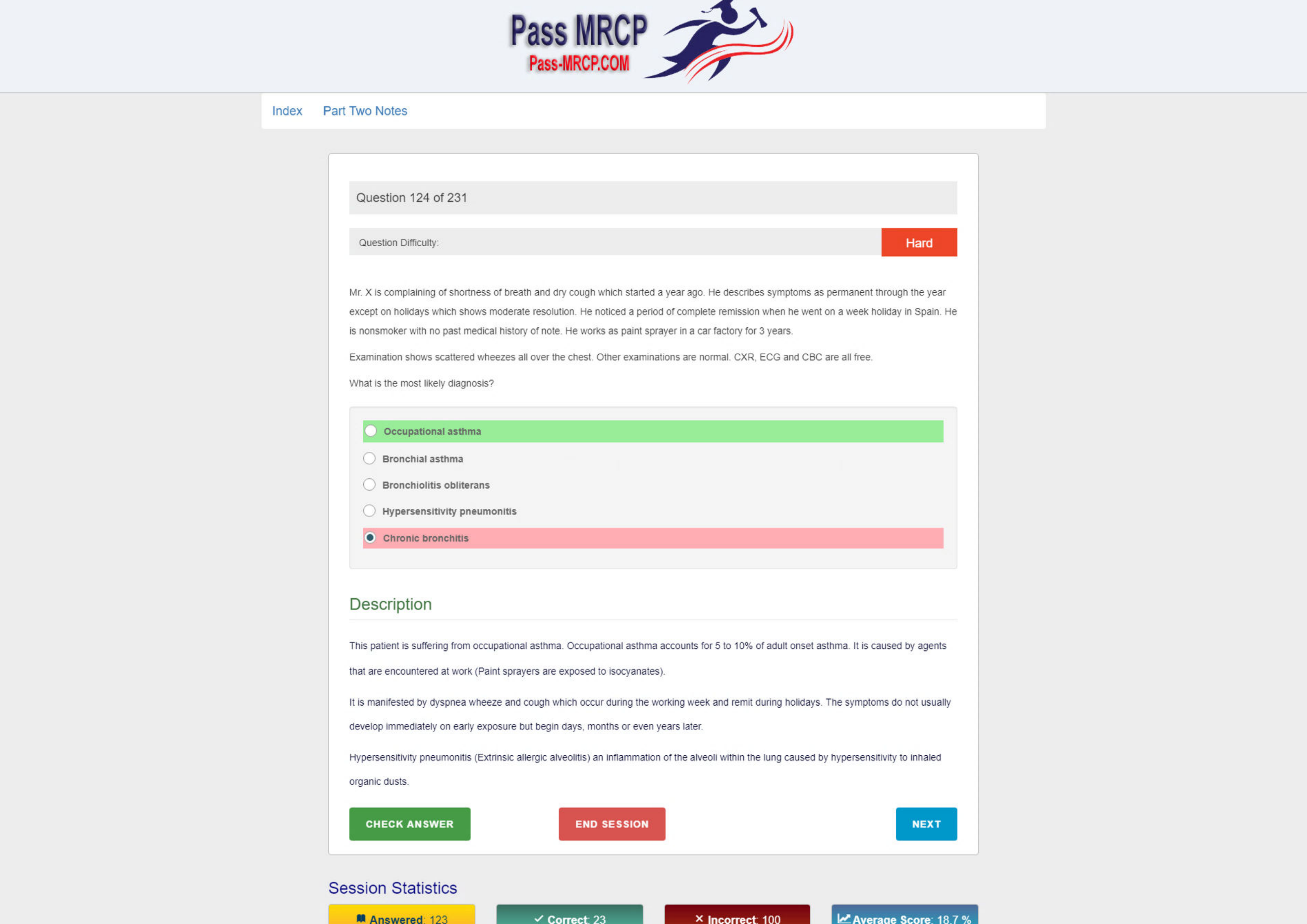
Atopic asthma is presented in early childhood. It occurs mostly in atopic individuals and usually with + ve family history of atopy e.g. urticaria or allergic rhinitis. It is usually seasonal and mediated by IgE.

Bronchial asthma is manifested by paroxysmal attacks of cough, dyspnea, chest tightness and expiratory wheezing. It is usually provoked by exposure to allergens, emotional stress, viral infection and nonspecific precipitating events.

Allergic bronchopulmonary aspergillosis is associated with autumn and winter seasons and not exacerbated by cold. Serum IgE is higher than in asthma levels reaches more than 1000 ng/ml.

Session Statistics

Answered: 122 **Correct**: 23 **Incorrect**: 99 **Average Score**: 18.85



Question 124 of 231

Question Difficulty: Hard

Mr. X is complaining of shortness of breath and dry cough which started a year ago. He describes symptoms as permanent through the year except on holidays which shows moderate resolution. He noticed a period of complete remission when he went on a week holiday in Spain. He is nonsmoker with no past medical history of note. He works as paint sprayer in a car factory for 3 years.

Examination shows scattered wheezes all over the chest. Other examinations are normal. CXR, ECG and CBC are all free.

What is the most likely diagnosis?

○ Occupational asthma
○ Bronchial asthma
○ Bronchiolitis obliterans
○ Hypersensitivity pneumonitis
● Chronic bronchitis

Description

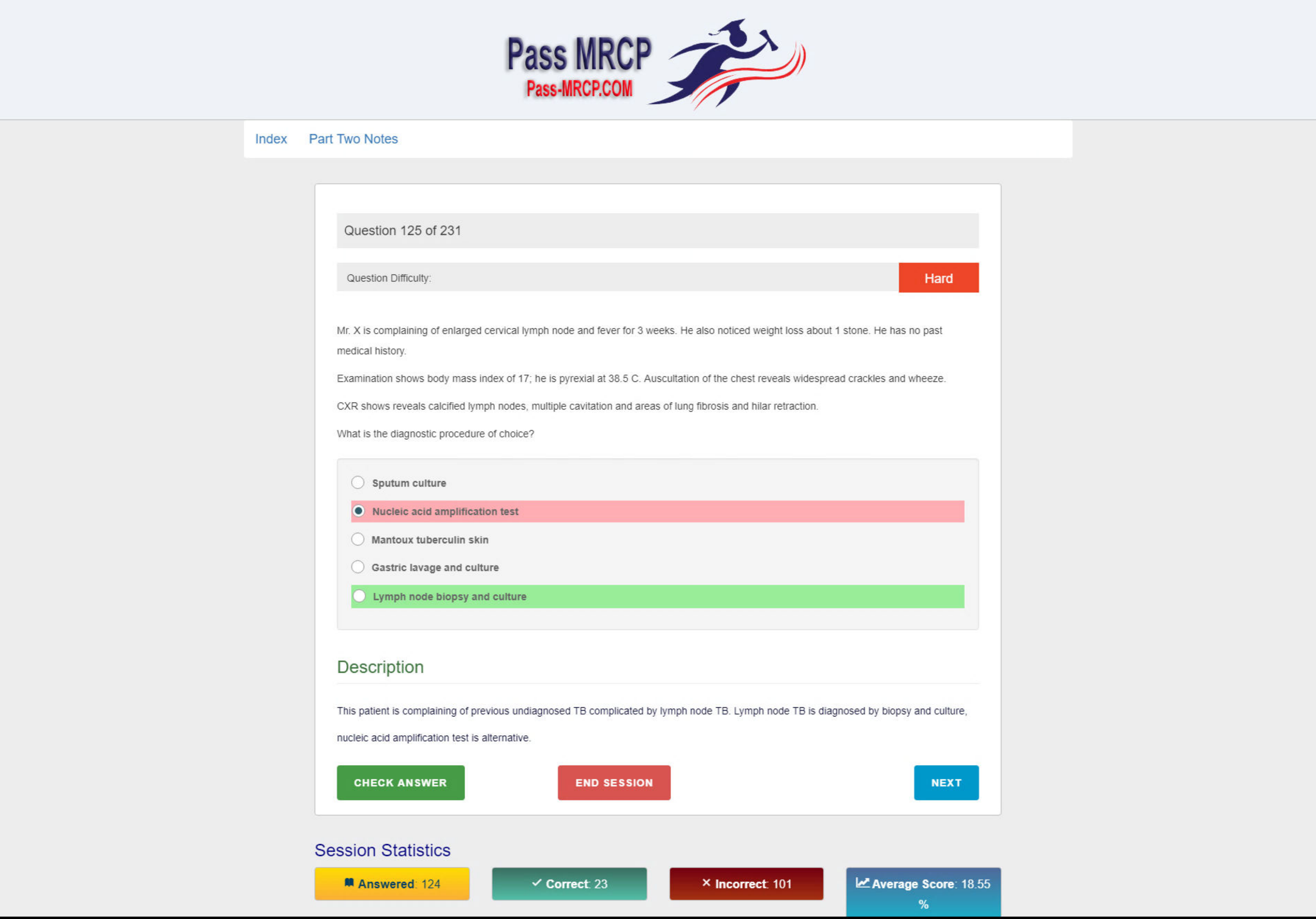
This patient is suffering from occupational asthma. Occupational asthma accounts for 5 to 10% of adult onset asthma. It is caused by agents that are encountered at work (Paint sprayers are exposed to isocyanates).

It is manifested by dyspnea wheeze and cough which occur during the working week and remit during holidays. The symptoms do not usually develop immediately on early exposure but begin days, months or even years later.

Hypersensitivity pneumonitis (Extrinsic allergic alveolitis) an inflammation of the alveoli within the lung caused by hypersensitivity to inhaled organic dusts.

Session Statistics

Answered: 123
Correct: 23
Incorrect: 100
Average Score: 18.7 %



Question 125 of 231

Question Difficulty: Hard

Mr. X is complaining of enlarged cervical lymph node and fever for 3 weeks. He also noticed weight loss about 1 stone. He has no past medical history.

Examination shows body mass index of 17; he is pyrexial at 38.5 C. Auscultation of the chest reveals widespread crackles and wheeze.

CXR shows reveals calcified lymph nodes, multiple cavitation and areas of lung fibrosis and hilar retraction.

What is the diagnostic procedure of choice?

- ○ **Sputum culture**
- ● **Nucleic acid amplification test**
- ○ **Mantoux tuberculin skin**
- ○ **Gastric lavage and culture**
- ○ **Lymph node biopsy and culture**

Description

This patient is complaining of previous undiagnosed TB complicated by lymph node TB. Lymph node TB is diagnosed by biopsy and culture, nucleic acid amplification test is alternative.

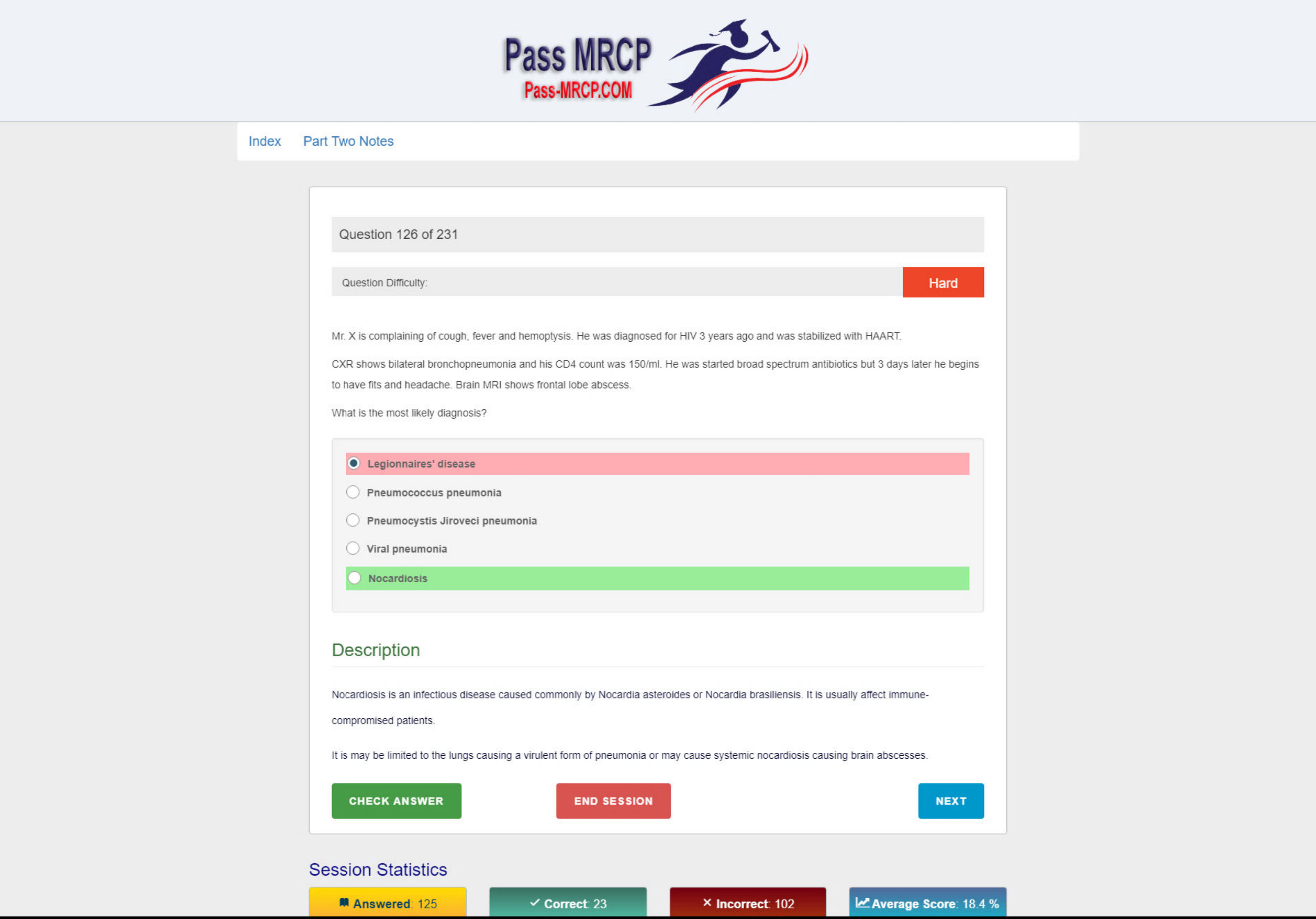
Session Statistics

Answered: 124

✓ Correct: 23

✕ Incorrect: 101

Average Score: 18.55 %



Question 126 of 231

Question Difficulty: **Hard**

Mr. X is complaining of cough, fever and hemoptysis. He was diagnosed for HIV 3 years ago and was stabilized with HAART.

CXR shows bilateral bronchopneumonia and his CD4 count was 150/ml. He was started broad spectrum antibiotics but 3 days later he begins to have fits and headache. Brain MRI shows frontal lobe abscess.

What is the most likely diagnosis?

- ● **Legionnaires' disease**
- ○ **Pneumococcus pneumonia**
- ○ **Pneumocystis Jiroveci pneumonia**
- ○ **Viral pneumonia**
- ○ **Nocardiosis**

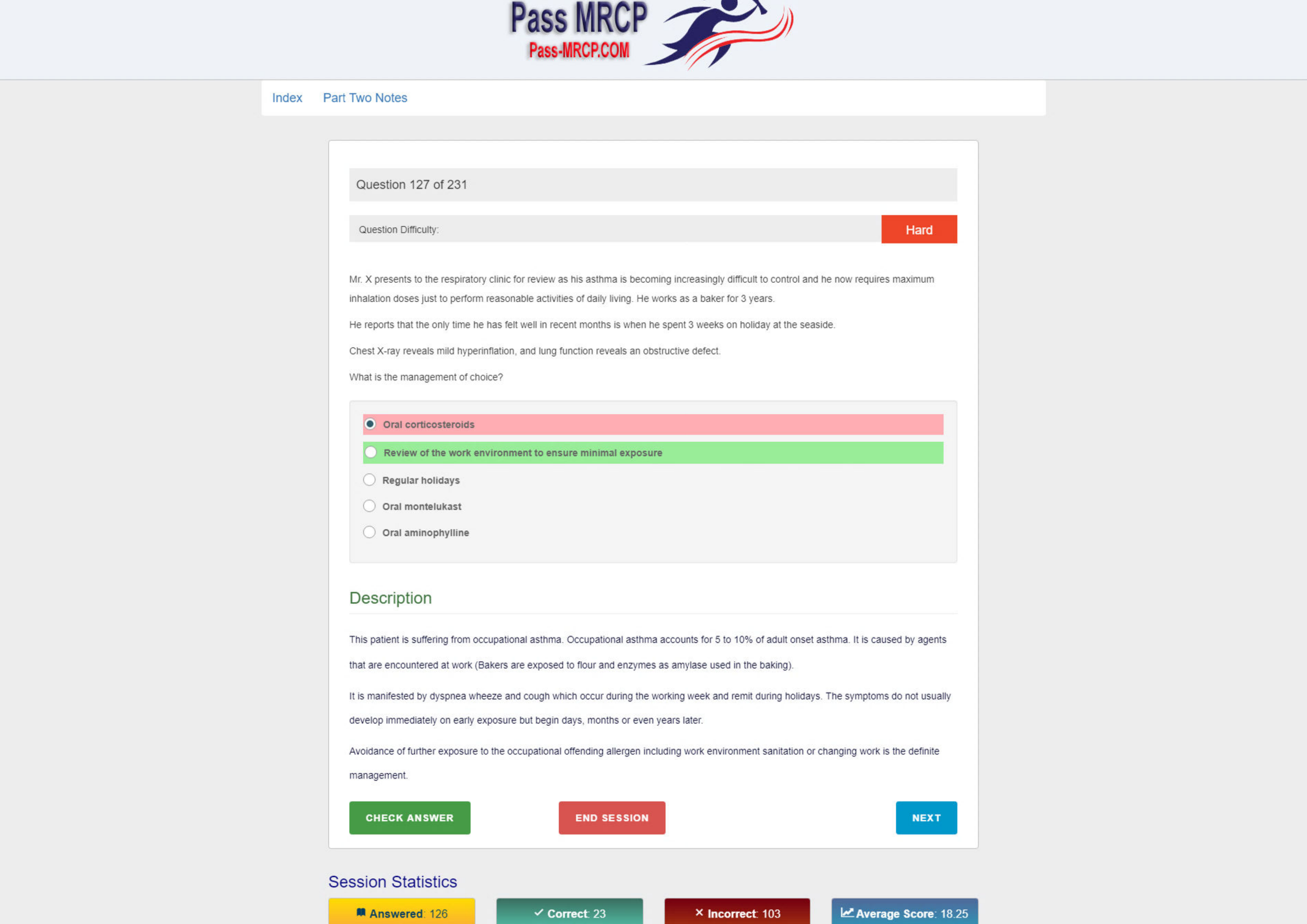
Description

Nocardiosis is an infectious disease caused commonly by Nocardia asteroides or Nocardia brasiliensis. It is usually affect immune-compromised patients.

It is may be limited to the lungs causing a virulent form of pneumonia or may cause systemic nocardiosis causing brain abscesses.

Session Statistics

Answered: 125
✓ **Correct**: 23
✕ **Incorrect**: 102
Average Score: 18.4 %



Question 127 of 231

Question Difficulty: **Hard**

Mr. X presents to the respiratory clinic for review as his asthma is becoming increasingly difficult to control and he now requires maximum inhalation doses just to perform reasonable activities of daily living. He works as a baker for 3 years.

He reports that the only time he has felt well in recent months is when he spent 3 weeks on holiday at the seaside.

Chest X-ray reveals mild hyperinflation, and lung function reveals an obstructive defect.

What is the management of choice?

- ● **Oral corticosteroids**
- ○ **Review of the work environment to ensure minimal exposure**
- ○ **Regular holidays**
- ○ **Oral montelukast**
- ○ **Oral aminophylline**

Description

This patient is suffering from occupational asthma. Occupational asthma accounts for 5 to 10% of adult onset asthma. It is caused by agents that are encountered at work (Bakers are exposed to flour and enzymes as amylase used in the baking).

It is manifested by dyspnea wheeze and cough which occur during the working week and remit during holidays. The symptoms do not usually develop immediately on early exposure but begin days, months or even years later.

Avoidance of further exposure to the occupational offending allergen including work environment sanitation or changing work is the definite management.

Session Statistics

Answered: 126
Correct: 23
Incorrect: 103
Average Score: 18.25

Question 128 of 231

Question Difficulty: Hard

Mr. X was admitted to the ED complaining of dyspnea, cough and chest pain for 2 hours. His CXR shows left sided pleural effusion. Thoracentesis was done and shows a cloudy yellow fluid. A sample was sent for analysis. The results show:

Pleural fluid WBCs	820 CM/3	(< 1000 / CM3)
Pleural fluid PH	7.63	(7.60-7.64)
Pleural fluid LDH	260 U/L	
Serum LDH	290 U/L	(135-750 U/L)
Pleural fluid protein	3.2 g/dL	
Serum protein	4.3 g/dL	(6.4–8.3 g/dL)
Pleural fluid triglyceride	0.61 mmol/L	(<1.24 mmol/L)

What is the most likely diagnosis?

○ **Pulmonary embolism**

○ **Lymphoma**

● **Myxedema**

○ **Lung abscesses**

○ **Nephrotic syndrome**

Description

The pleural fluid shows features of exudative effusion. Exudate appears cloudy with specific gravity > 1.020, fluid LDH > ⅔ the upper limit for serum and protein content >3 g/dL or fluid protein: serum protein > 1/2

Conditions associated with exudative pleural effusions (mostly pulmonary causes):

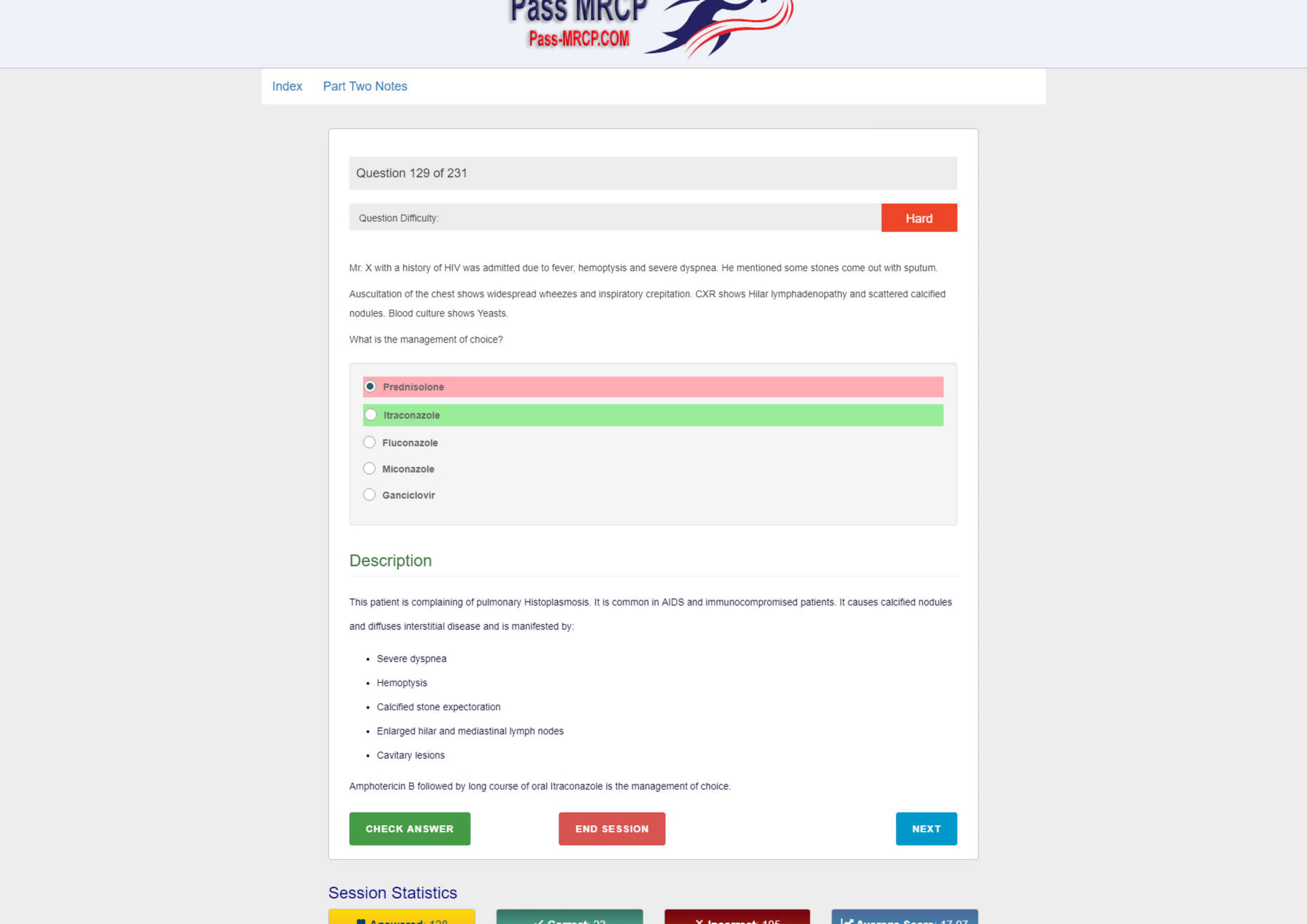
- Malignancy
- Pneumonia and tuberculosis
- Trauma
- Pulmonary infarction and embolism
- Autoimmune disorders as rheumatoid pleurisy and drug-induced Lupus
- Pancreatitis
- Ruptured esophagus

Lung abscesses causes pyothorax with pleural fluid pH less than 7.2. Lymphoma causes chylothorax with elevated pleural fluid lipase or triglyceride levels.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 127 ✓ **Correct**: 23 ✕ **Incorrect**: 104 **Average Score**: 18.11 %



Question 129 of 231

Question Difficulty: **Hard**

Mr. X with a history of HIV was admitted due to fever, hemoptysis and severe dyspnea. He mentioned some stones come out with sputum.

Auscultation of the chest shows widespread wheezes and inspiratory crepitation. CXR shows Hilar lymphadenopathy and scattered calcified nodules. Blood culture shows Yeasts.

What is the management of choice?

● **Prednisolone**

○ **Itraconazole**

○ **Fluconazole**

○ **Miconazole**

○ **Ganciclovir**

Description

This patient is complaining of pulmonary Histoplasmosis. It is common in AIDS and immunocompromised patients. It causes calcified nodules and diffuses interstitial disease and is manifested by:

- Severe dyspnea
- Hemoptysis
- Calcified stone expectoration
- Enlarged hilar and mediastinal lymph nodes
- Cavitary lesions

Amphotericin B followed by long course of oral Itraconazole is the management of choice.

Session Statistics

Question 130 of 231

Question Difficulty: **Hard**

Mr. X is complaining of a severe dull right-sided chest pain for 3 months. He is a heavy smoker of 30 cigarettes per day and he works as a demolition worker.

Examination of her chest demonstrates reduced expansion, vocal fremitus, breath sounds and dull percussion note throughout the right lung.

CXR reveals massive pleural effusion and CT chest reveals pleural plaques. Thoracentesis shows uniform bloody effusion. Pleural fluid analysis shows:

Pleural fluid WBCs	1230 CM3, 60% lymphocytosis	(< 1000 / CM3)
Pleural fluid PH	7.6	(7.60-7.64)
Pleural fluid LDH	1700 U/L	
Serum LDH	640 U/L	(135-750 U/L)
Pleural fluid protein	4.2 g/dL	
Serum protein	6.2 g/dL	(6.4–8.3 g/dL)
Pleural fluid glucose	1.8 mmol/L	
Serum glucose	4.3 mmol/L	
Pleural fluid amylase	60 U/L	(<100 U/L)
Serum glucose	4.3 mmol/L	
Pleural fluid amylase	60 U/L	(<100 U/L)
Pleural fluid triglyceride	0.6 mmol/L	(<1.24 mmol/L)

How to diagnose this case?

○ **Pleural fluid analysis for asbestosis**

○ **Needle pleural biopsy**

● **Bronchoscopy and biopsy**

○ **Video-assisted thoracoscopy and pleural biopsy**

○ **Surgical pleural biopsy**

Description

This patient is complaining of mesothelioma. It is a cancer that develops from cells of the mesothelium (the protective lining that covers many of the internal organs). Mesothelioma of the pleura is most commonly caused by exposure to asbestos.

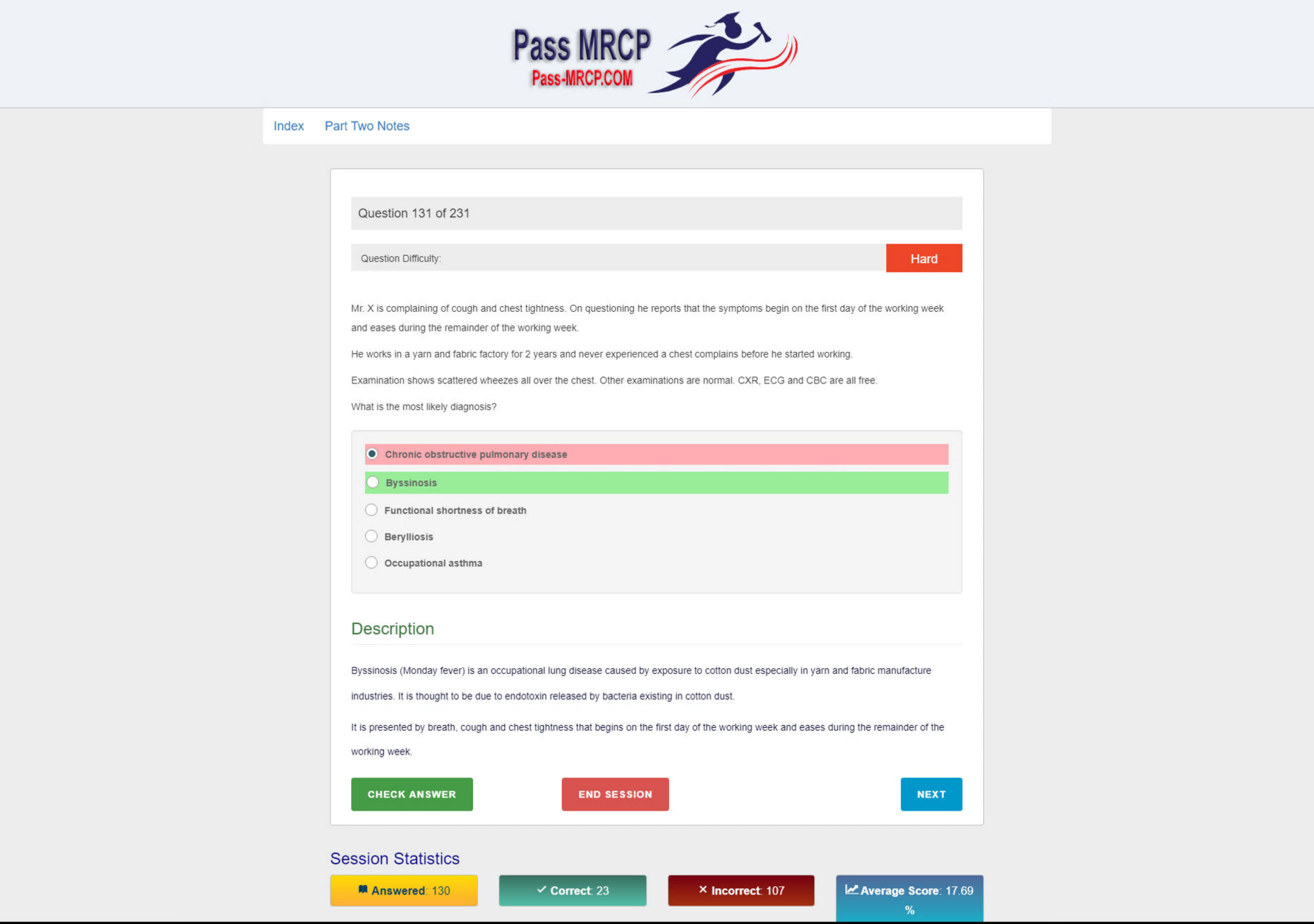
Malignant effusion is manifested by exudative effusion, pleural fluid LDH levels greater than 1000 IU/L, a low pleural glucose concentration (1.5-3 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte of 50-70%.

Video-assisted thoracoscopy and pleural biopsy is of choice to confirm diagnosis.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 129 ✓ **Correct**: 23 ✕ **Incorrect**: 106 **Average Score**: 17.83 %



Question 131 of 231

Question Difficulty: Hard

Mr. X is complaining of cough and chest tightness. On questioning he reports that the symptoms begin on the first day of the working week and eases during the remainder of the working week.

He works in a yarn and fabric factory for 2 years and never experienced a chest complains before he started working.

Examination shows scattered wheezes all over the chest. Other examinations are normal. CXR, ECG and CBC are all free.

What is the most likely diagnosis?

- ● Chronic obstructive pulmonary disease
- ○ Byssinosis
- ○ Functional shortness of breath
- ○ Berylliosis
- ○ Occupational asthma

Description

Byssinosis (Monday fever) is an occupational lung disease caused by exposure to cotton dust especially in yarn and fabric manufacture industries. It is thought to be due to endotoxin released by bacteria existing in cotton dust.

It is presented by breath, cough and chest tightness that begins on the first day of the working week and eases during the remainder of the working week.

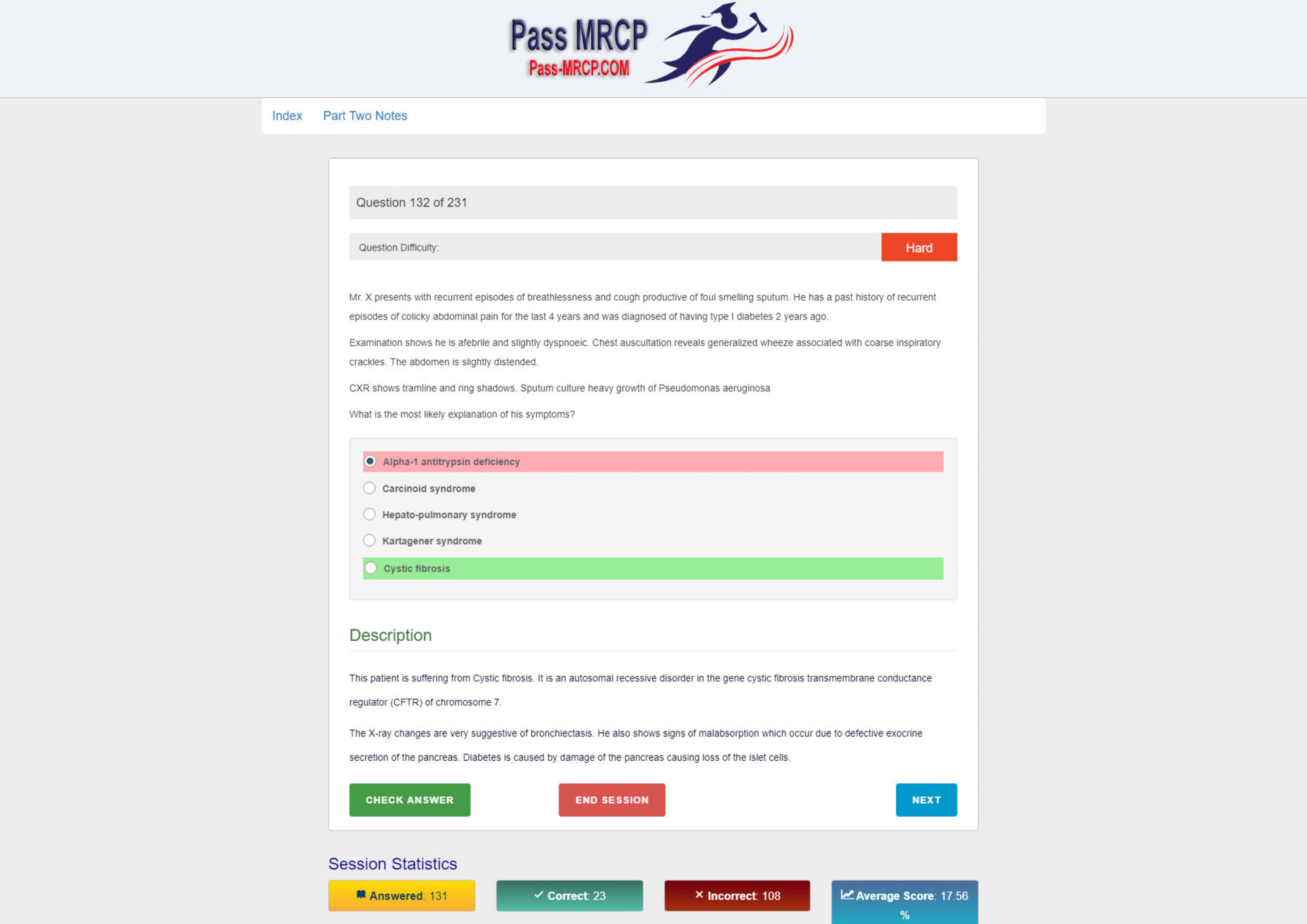
Session Statistics

Answered: 130

✓ Correct: 23

✕ Incorrect: 107

Average Score: 17.69 %



Question 132 of 231

Question Difficulty: **Hard**

Mr. X presents with recurrent episodes of breathlessness and cough productive of foul smelling sputum. He has a past history of recurrent episodes of colicky abdominal pain for the last 4 years and was diagnosed of having type I diabetes 2 years ago.

Examination shows he is afebrile and slightly dyspnoeic. Chest auscultation reveals generalized wheeze associated with coarse inspiratory crackles. The abdomen is slightly distended.

CXR shows tramline and ring shadows. Sputum culture heavy growth of Pseudomonas aeruginosa

What is the most likely explanation of his symptoms?

- ● **Alpha-1 antitrypsin deficiency**
- ○ **Carcinoid syndrome**
- ○ **Hepato-pulmonary syndrome**
- ○ **Kartagener syndrome**
- ○ **Cystic fibrosis**

Description

This patient is suffering from Cystic fibrosis. It is an autosomal recessive disorder in the gene cystic fibrosis transmembrane conductance regulator (CFTR) of chromosome 7.

The X-ray changes are very suggestive of bronchiectasis. He also shows signs of malabsorption which occur due to defective exocrine secretion of the pancreas. Diabetes is caused by damage of the pancreas causing loss of the islet cells.

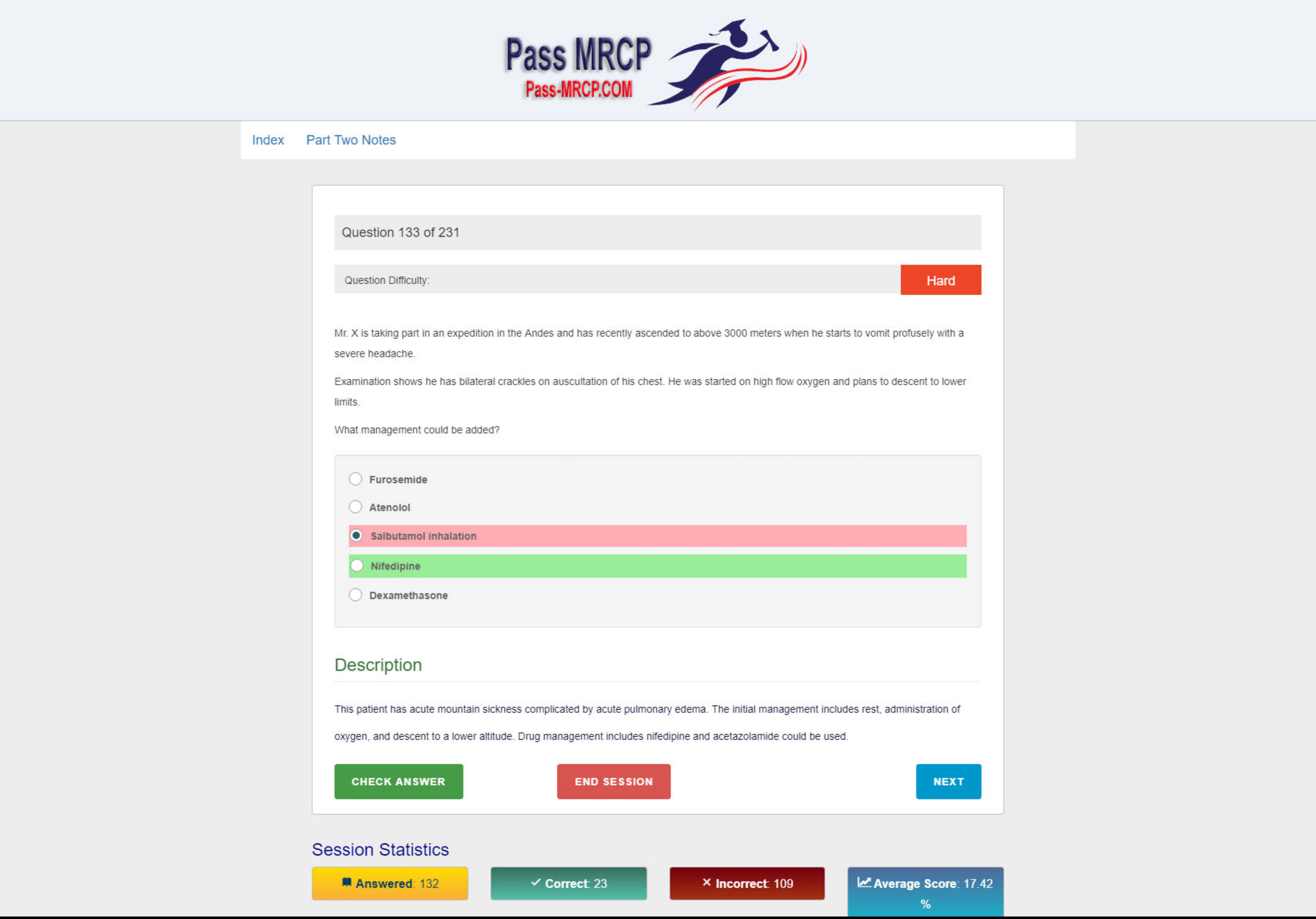
Session Statistics

Answered: 131

✓ **Correct**: 23

× **Incorrect**: 108

Average Score: 17.56 %



Question 133 of 231

Question Difficulty: Hard

Mr. X is taking part in an expedition in the Andes and has recently ascended to above 3000 meters when he starts to vomit profusely with a severe headache.

Examination shows he has bilateral crackles on auscultation of his chest. He was started on high flow oxygen and plans to descent to lower limits.

What management could be added?

- ○ **Furosemide**
- ○ **Atenolol**
- ● **Salbutamol inhalation**
- ○ **Nifedipine**
- ○ **Dexamethasone**

Description

This patient has acute mountain sickness complicated by acute pulmonary edema. The initial management includes rest, administration of oxygen, and descent to a lower altitude. Drug management includes nifedipine and acetazolamide could be used.

Session Statistics

Answered: 132

✓ **Correct**: 23

× **Incorrect**: 109

Average Score: 17.42 %

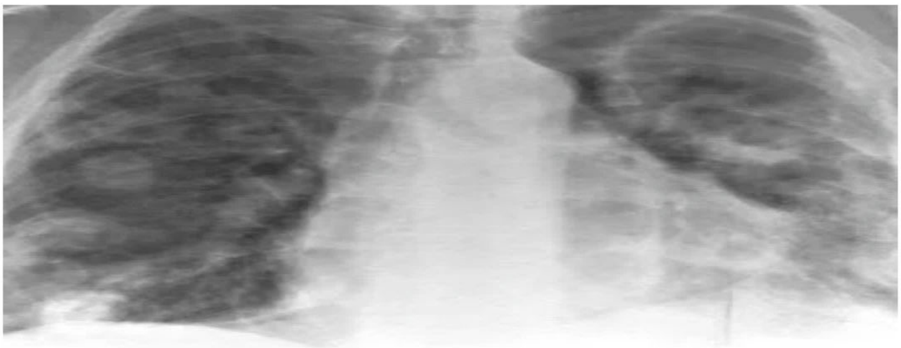
Question 134 of 231

Question Difficulty: **Average**

Mr. X is suffering from 2-month history of cough, hemoptysis and breathlessness. He has also noted anuria for the past 2 days. He had a 6 months history of epistaxis.

Examination reveals he has bilateral course crepitation and reduced air entry. His CXR is shown in the image. Investigations show:

Hemoglobin	10 g/dL	(13.5-17.5 g/dL)
Serum creatinine	155 mmol/L	(53-106 mmol/L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	5.5 mmol/L	(3.5-5.0 mmol/L)
Serum calcium	2.0 mmol/L	(2.1-2.8 mmol/L)
24 urine	2.2 gm protein	
Urine dipstick	blood +++	
ESR	110 1st hour	



What is the most likely diagnosis?

○ **Wegener granulomatosis**
○ **Microscopic polyangiitis**
○ **Sarcoidosis**
○ **SLE**
● **Goodpasture syndrome**

Description

Wegener granulomatosis is primary systemic small to medium-sized vessel vasculitis associated with ANCA antibodies causing necrotizing granulomatous lesions. It is manifested by:

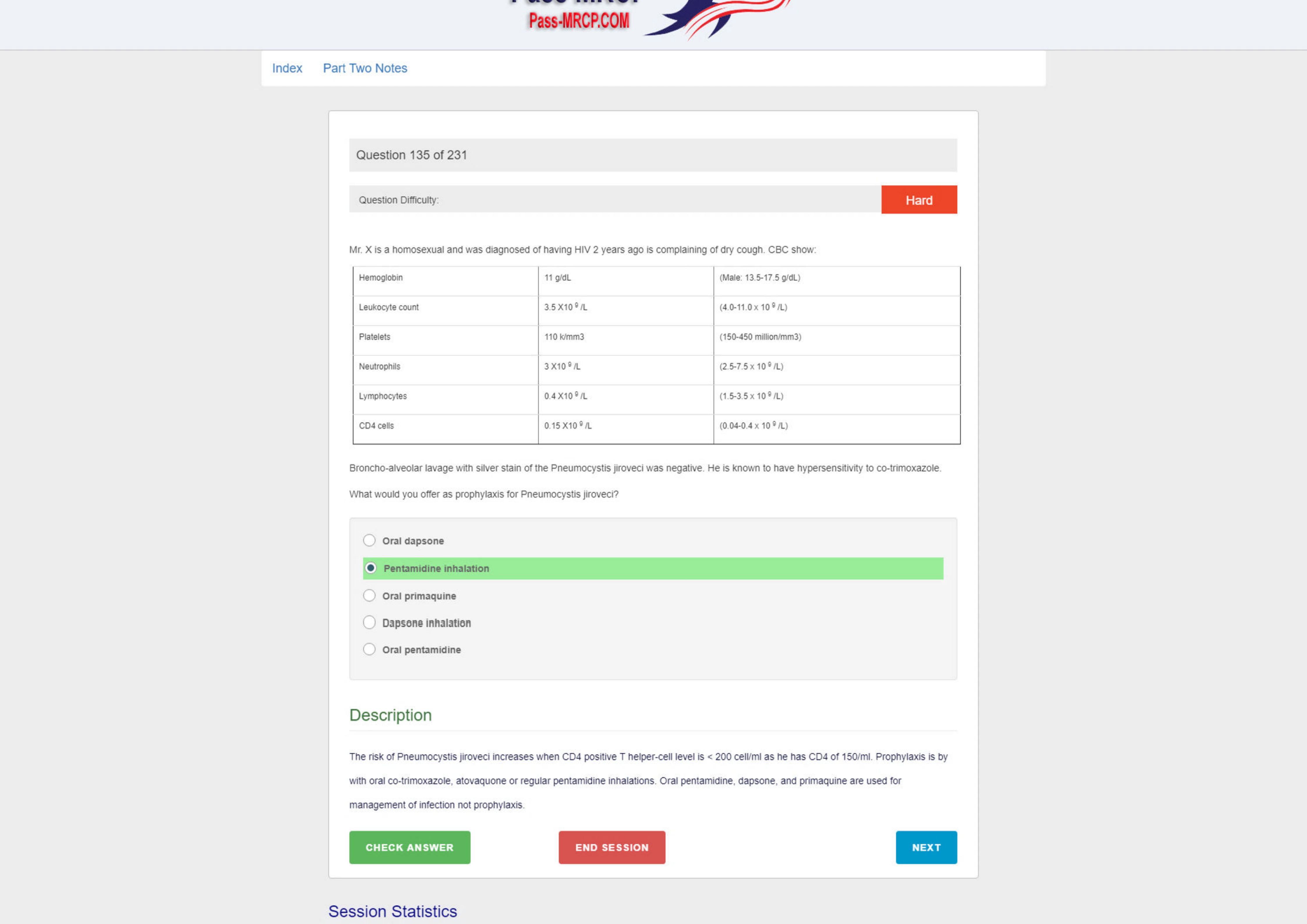
- Upper respiratory tract: epistaxis, sinusitis, nasal crusting and saddle-shape nose deformity
- Lower respiratory tract: dyspnea and hemoptysis
- Pauci-immune (rapidly progressive) glomerulonephritis
- Very high ESR levels
- CXR shows multiple rounded and cavitary lesions

Goodpasture syndrome causes massive pulmonary hemorrhage with interstitial shadowing but no epistaxis. Microscopic polyangiitis causes interstitial lung fibrosis and pulmonary hemorrhage.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 133 ✓ **Correct**: 23 ✕ **Incorrect**: 110 **Average Score**: 17.29 %



Question 135 of 231

Question Difficulty: **Hard**

Mr. X is a homosexual and was diagnosed of having HIV 2 years ago is complaining of dry cough. CBC show:

Hemoglobin	11 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	3.5 X10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	110 k/mm3	(150-450 million/mm3)
Neutrophils	3 X10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	0.4 X10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
CD4 cells	0.15 X10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)

Broncho-alveolar lavage with silver stain of the Pneumocystis jiroveci was negative. He is known to have hypersensitivity to co-trimoxazole.

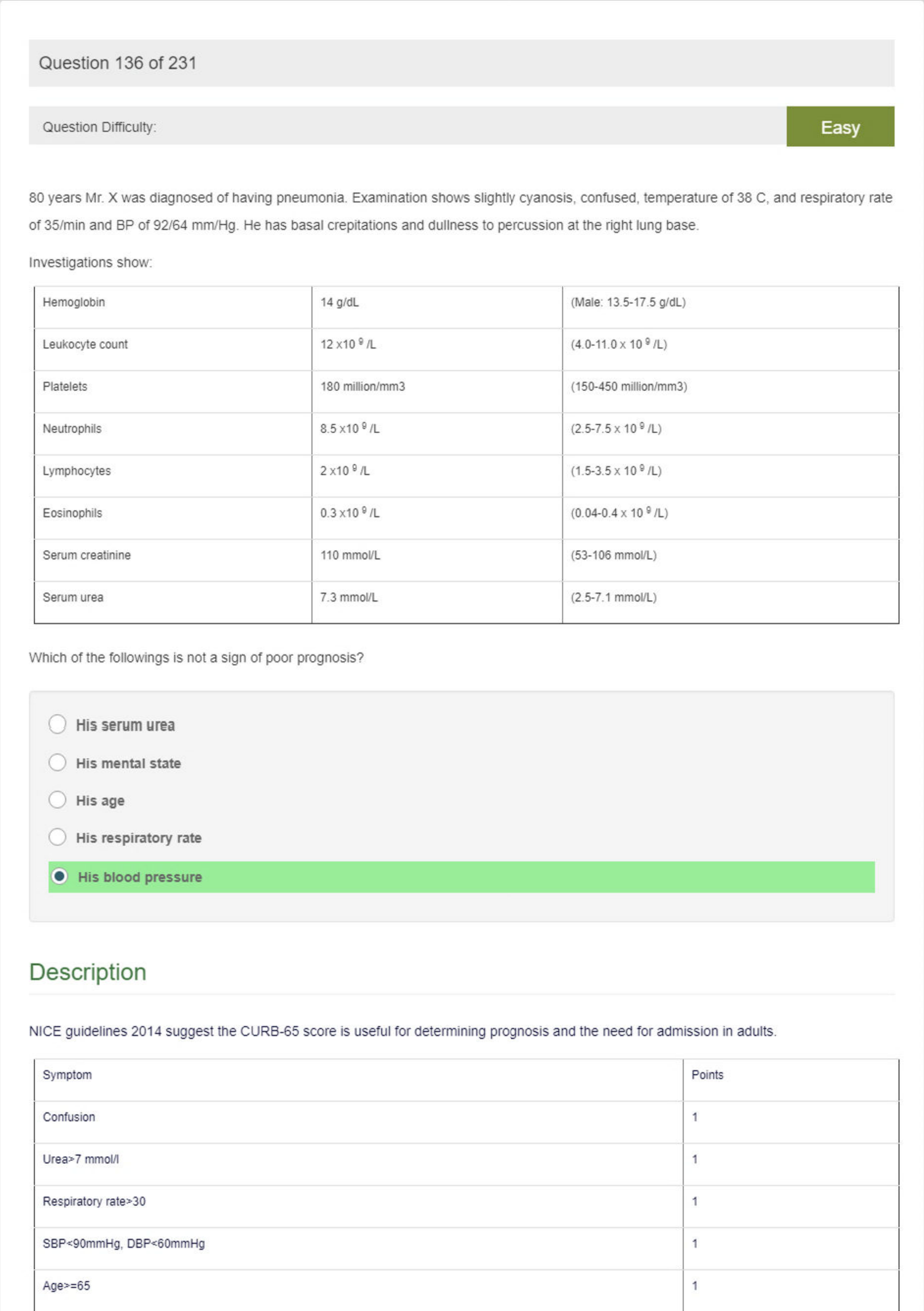
What would you offer as prophylaxis for Pneumocystis jiroveci?

- ○ **Oral dapsone**
- ● **Pentamidine inhalation**
- ○ **Oral primaquine**
- ○ **Dapsone inhalation**
- ○ **Oral pentamidine**

Description

The risk of Pneumocystis jiroveci increases when CD4 positive T helper-cell level is < 200 cell/ml as he has CD4 of 150/ml. Prophylaxis is by with oral co-trimoxazole, atovaquone or regular pentamidine inhalations. Oral pentamidine, dapsone, and primaquine are used for management of infection not prophylaxis.

Session Statistics



Question 136 of 231

Question Difficulty: **Easy**

80 years Mr. X was diagnosed of having pneumonia. Examination shows slightly cyanosis, confused, temperature of 38 C, and respiratory rate of 35/min and BP of 92/64 mm/Hg. He has basal crepitations and dullness to percussion at the right lung base.

Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 x10^{9} /L	(4.0-11.0 x 10^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10^{9} /L	(2.5-7.5 x 10^{9} /L)
Lymphocytes	2 x10^{9} /L	(1.5-3.5 x 10^{9} /L)
Eosinophils	0.3 x10^{9} /L	(0.04-0.4 x 10^{9} /L)
Serum creatinine	110 mmol/L	(53-106 mmol/L)
Serum urea	7.3 mmol/L	(2.5-7.1 mmol/L)

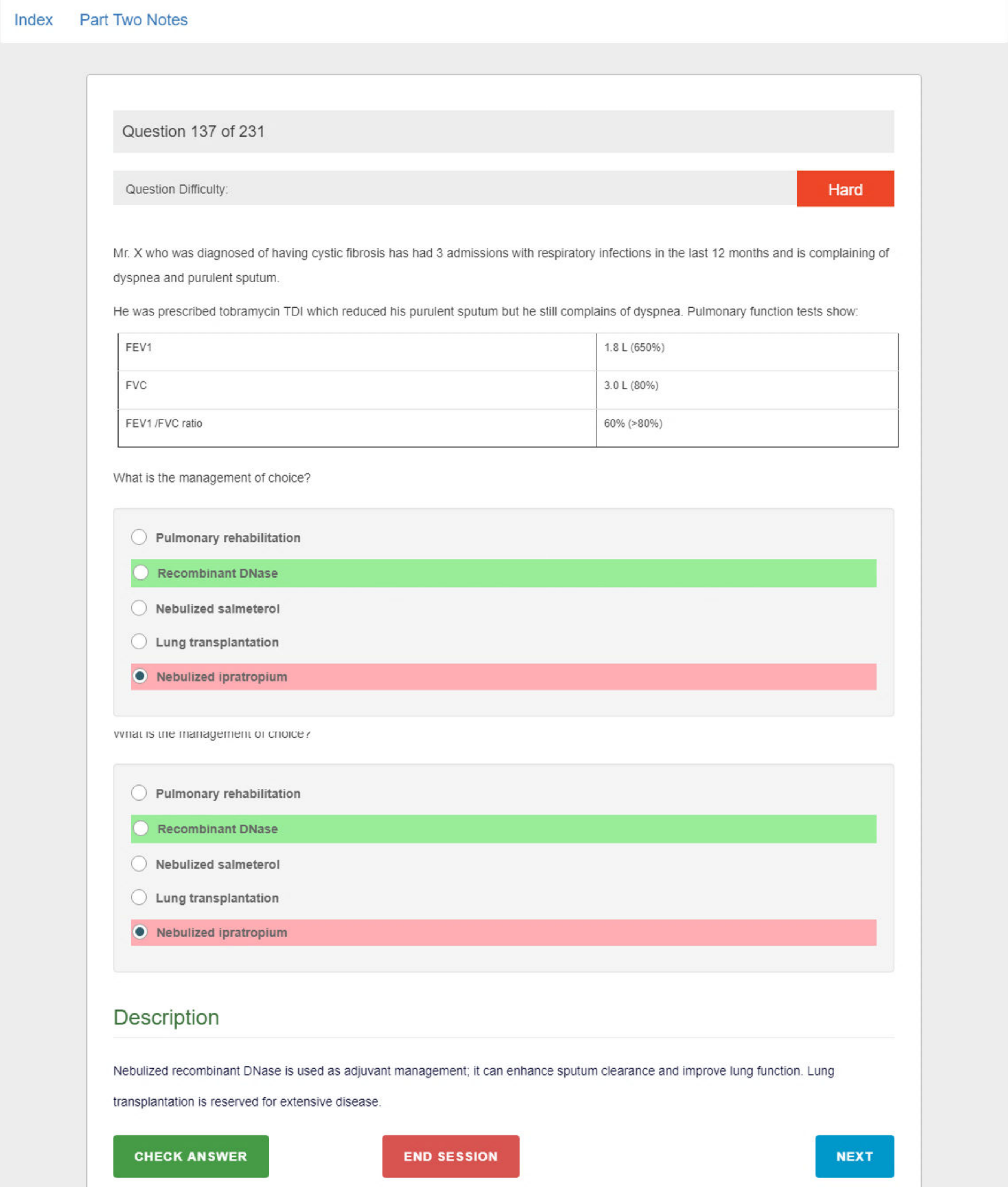
Which of the followings is not a sign of poor prognosis?

- ○ **His serum urea**
- ○ **His mental state**
- ○ **His age**
- ○ **His respiratory rate**
- ● **His blood pressure**

Description

NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1
Age>=65	1



Question 137 of 231

Question Difficulty: **Hard**

Mr. X who was diagnosed of having cystic fibrosis has had 3 admissions with respiratory infections in the last 12 months and is complaining of dyspnea and purulent sputum.

He was prescribed tobramycin TDI which reduced his purulent sputum but he still complains of dyspnea. Pulmonary function tests show:

FEV1	1.8 L (650%)
FVC	3.0 L (80%)
FEV1 /FVC ratio	60% (>80%)

What is the management of choice?

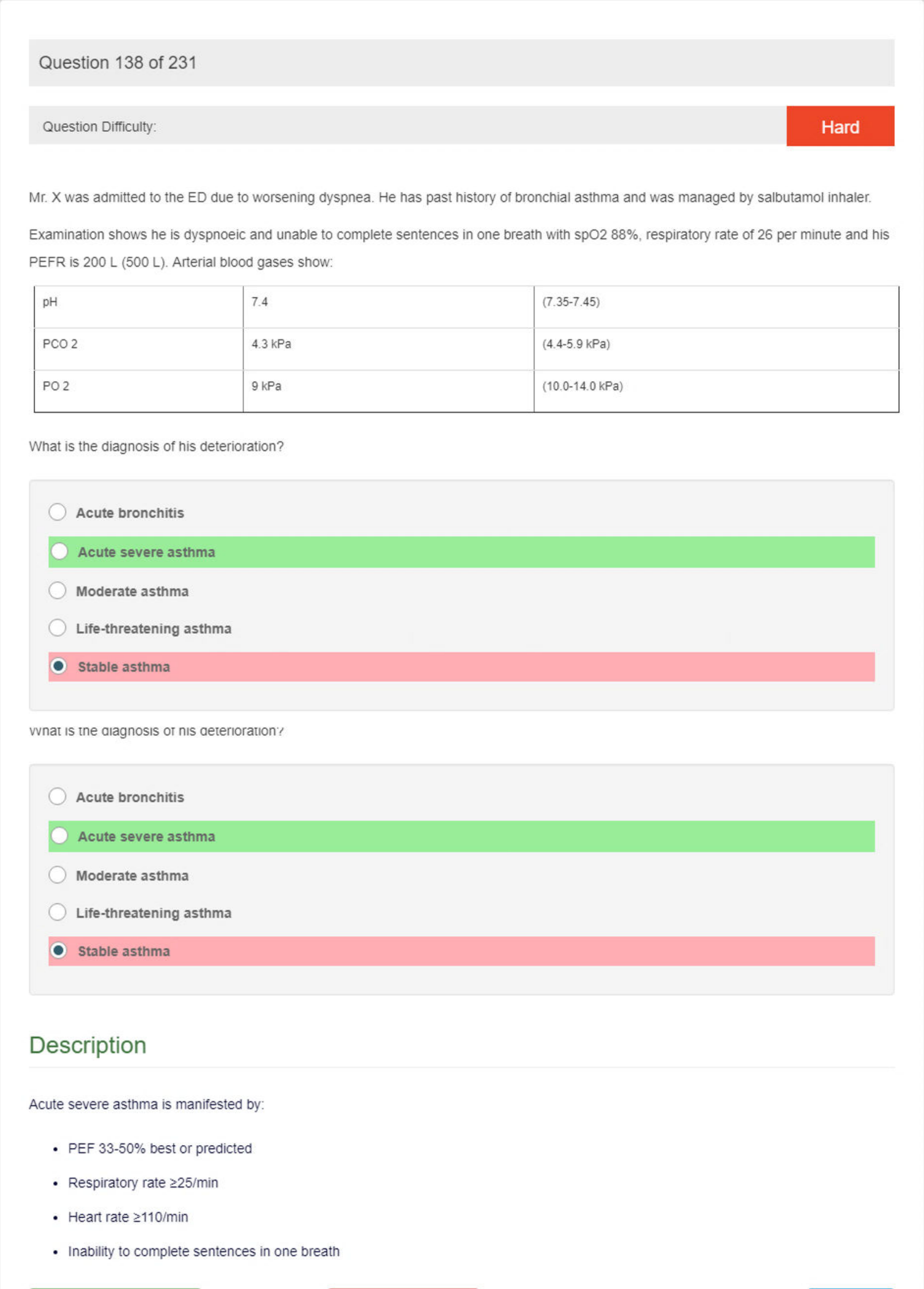
- ○ **Pulmonary rehabilitation**
- ○ **Recombinant DNase** 🟩
- ○ **Nebulized salmeterol**
- ○ **Lung transplantation**
- ● **Nebulized ipratropium** 🟥

What is the management of choice?

- ○ **Pulmonary rehabilitation**
- ○ **Recombinant DNase** 🟩
- ○ **Nebulized salmeterol**
- ○ **Lung transplantation**
- ● **Nebulized ipratropium** 🟥

Description

Nebulized recombinant DNase is used as adjuvant management; it can enhance sputum clearance and improve lung function. Lung transplantation is reserved for extensive disease.



Question 138 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to worsening dyspnea. He has past history of bronchial asthma and was managed by salbutamol inhaler.

Examination shows he is dyspnoeic and unable to complete sentences in one breath with spO2 88%, respiratory rate of 26 per minute and his PEFR is 200 L (500 L). Arterial blood gases show:

pH	7.4	(7.35-7.45)
PCO 2	4.3 kPa	(4.4-5.9 kPa)
PO 2	9 kPa	(10.0-14.0 kPa)

What is the diagnosis of his deterioration?

- ○ **Acute bronchitis**
- ○ **Acute severe asthma** 🟩
- ○ **Moderate asthma**
- ○ **Life-threatening asthma**
- ● **Stable asthma** 🟥

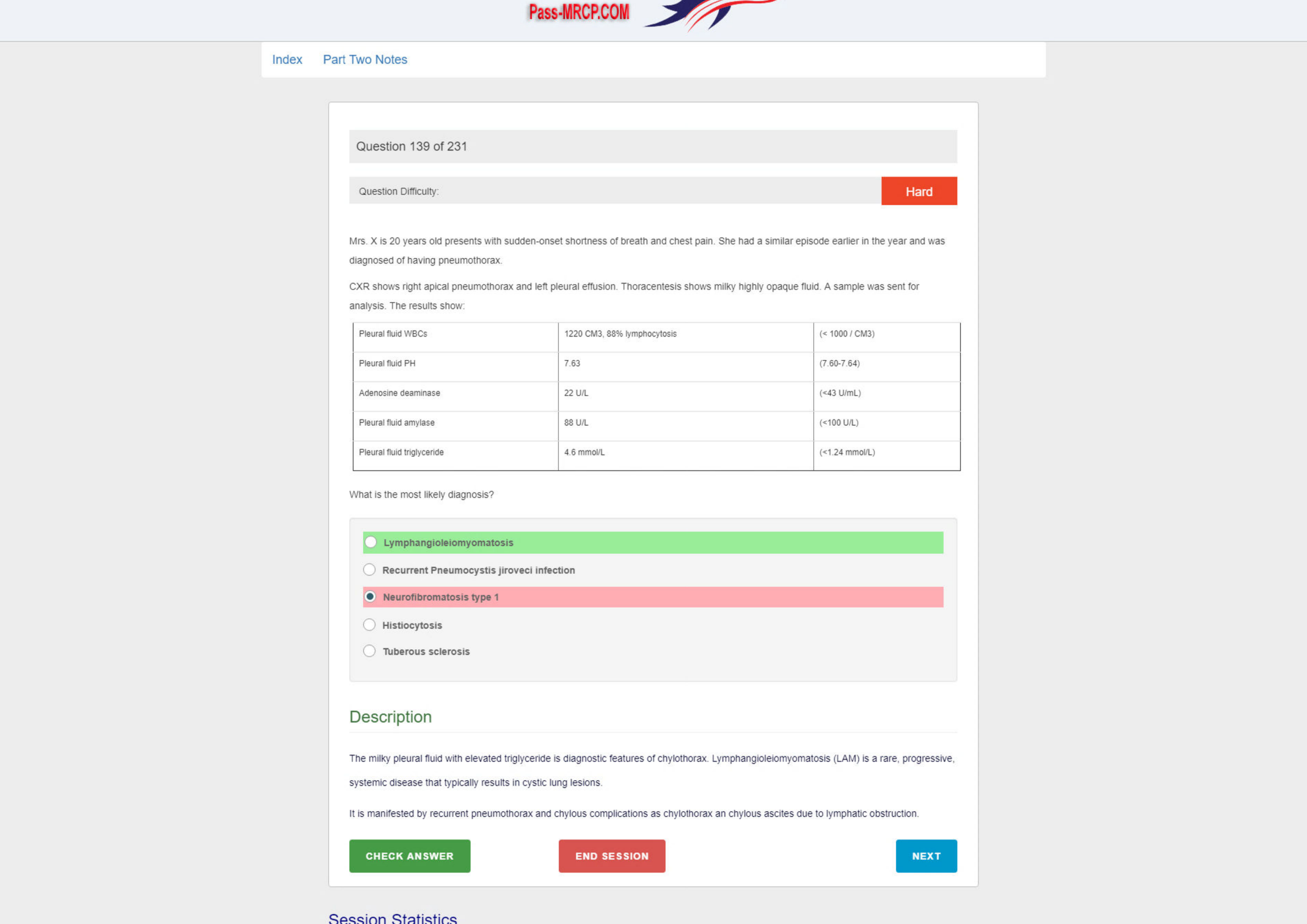
What is the diagnosis of his deterioration?

- ○ **Acute bronchitis**
- ○ **Acute severe asthma** 🟩
- ○ **Moderate asthma**
- ○ **Life-threatening asthma**
- ● **Stable asthma** 🟥

Description

Acute severe asthma is manifested by:

- PEF 33-50% best or predicted
- Respiratory rate ≥25/min
- Heart rate ≥110/min
- Inability to complete sentences in one breath



Question 139 of 231

Question Difficulty: **Hard**

Mrs. X is 20 years old presents with sudden-onset shortness of breath and chest pain. She had a similar episode earlier in the year and was diagnosed of having pneumothorax.

CXR shows right apical pneumothorax and left pleural effusion. Thoracentesis shows milky highly opaque fluid. A sample was sent for analysis. The results show:

Pleural fluid WBCs	1220 CM3, 88% lymphocytosis	(< 1000 / CM3)
Pleural fluid PH	7.63	(7.60-7.64)
Adenosine deaminase	22 U/L	(<43 U/mL)
Pleural fluid amylase	88 U/L	(<100 U/L)
Pleural fluid triglyceride	4.6 mmol/L	(<1.24 mmol/L)

What is the most likely diagnosis?

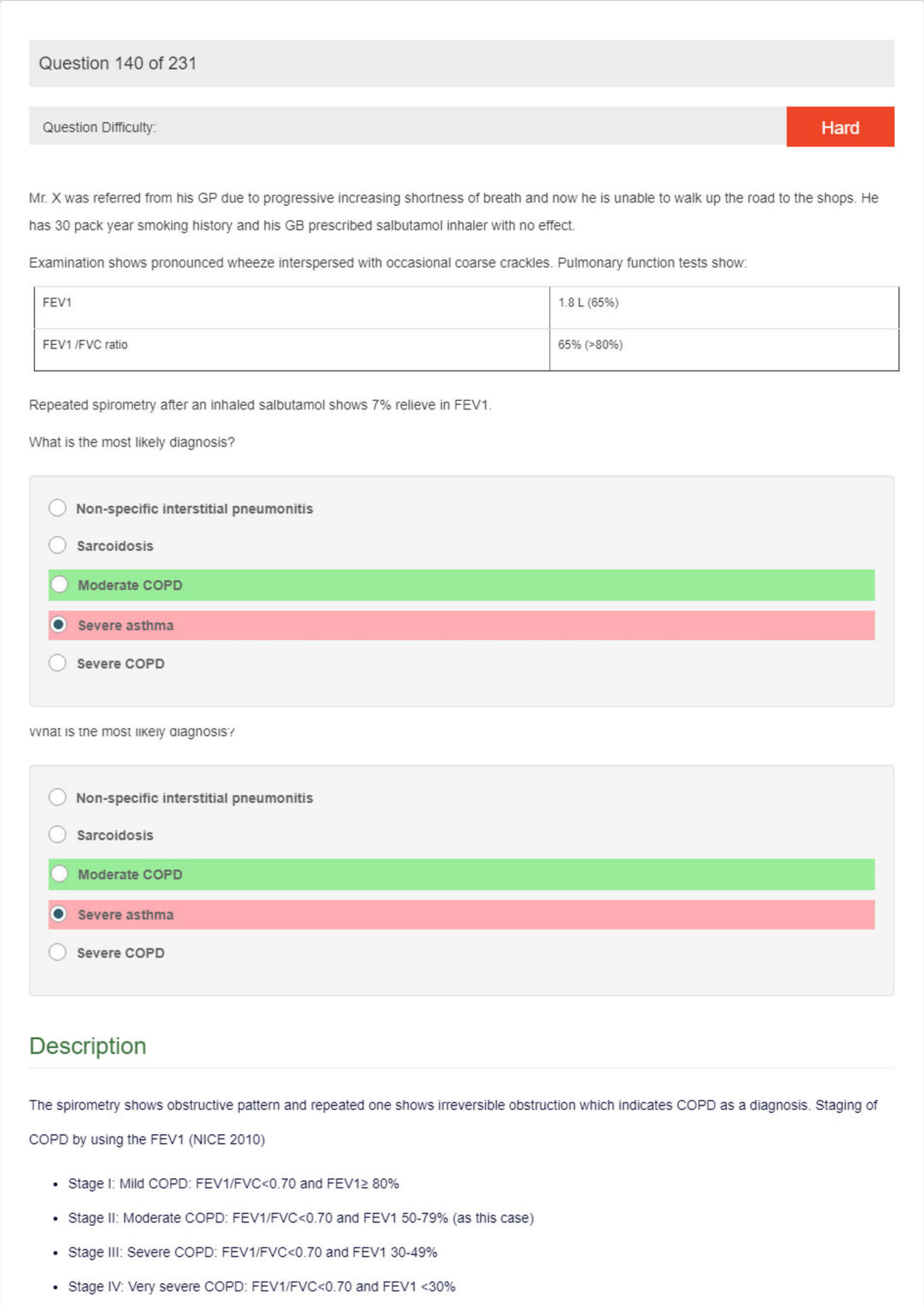
- ○ **Lymphangioleiomyomatosis**
- ○ **Recurrent Pneumocystis jiroveci infection**
- ● **Neurofibromatosis type 1**
- ○ **Histiocytosis**
- ○ **Tuberous sclerosis**

Description

The milky pleural fluid with elevated triglyceride is diagnostic features of chylothorax. Lymphangioleiomyomatosis (LAM) is a rare, progressive, systemic disease that typically results in cystic lung lesions.

It is manifested by recurrent pneumothorax and chylous complications as chylothorax an chylous ascites due to lymphatic obstruction.

Session Statistics



Question 140 of 231

Question Difficulty: **Hard**

Mr. X was referred from his GP due to progressive increasing shortness of breath and now he is unable to walk up the road to the shops. He has 30 pack year smoking history and his GB prescribed salbutamol inhaler with no effect.

Examination shows pronounced wheeze interspersed with occasional coarse crackles. Pulmonary function tests show:

FEV1	1.8 L (65%)
FEV1 /FVC ratio	65% (>80%)

Repeated spirometry after an inhaled salbutamol shows 7% relieve in FEV1.

What is the most likely diagnosis?

○ **Non-specific interstitial pneumonitis**
○ **Sarcoidosis**
○ **Moderate COPD**
● **Severe asthma**
○ **Severe COPD**

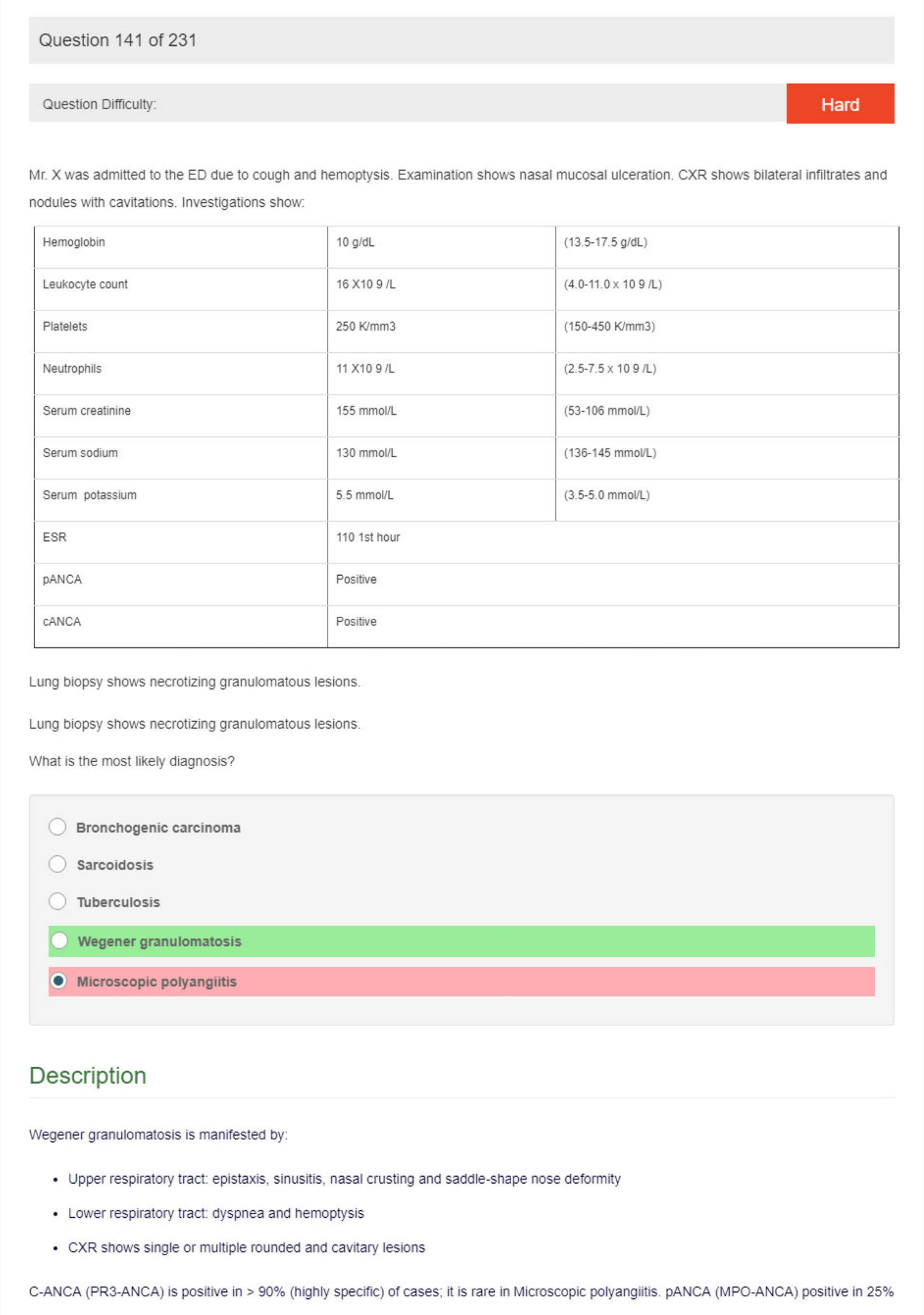
What is the most likely diagnosis?

○ **Non-specific interstitial pneumonitis**
○ **Sarcoidosis**
○ **Moderate COPD**
● **Severe asthma**
○ **Severe COPD**

Description

The spirometry shows obstructive pattern and repeated one shows irreversible obstruction which indicates COPD as a diagnosis. Staging of COPD by using the FEV1 (NICE 2010)

- Stage I: Mild COPD: FEV1/FVC<0.70 and FEV1≥ 80%
- Stage II: Moderate COPD: FEV1/FVC<0.70 and FEV1 50-79% (as this case)
- Stage III: Severe COPD: FEV1/FVC<0.70 and FEV1 30-49%
- Stage IV: Very severe COPD: FEV1/FVC<0.70 and FEV1 <30%



Question 141 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to cough and hemoptysis. Examination shows nasal mucosal ulceration. CXR shows bilateral infiltrates and nodules with cavitations. Investigations show:

Hemoglobin	10 g/dL	(13.5-17.5 g/dL)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	11 X10 9 /L	(2.5-7.5 x 10 9 /L)
Serum creatinine	155 mmol/L	(53-106 mmol/L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	5.5 mmol/L	(3.5-5.0 mmol/L)
ESR	110 1st hour	
pANCA	Positive	
cANCA	Positive	

Lung biopsy shows necrotizing granulomatous lesions.

Lung biopsy shows necrotizing granulomatous lesions.

What is the most likely diagnosis?

○ **Bronchogenic carcinoma**
○ **Sarcoidosis**
○ **Tuberculosis**
○ **Wegener granulomatosis**
● **Microscopic polyangiitis**

Description

Wegener granulomatosis is manifested by:

- Upper respiratory tract: epistaxis, sinusitis, nasal crusting and saddle-shape nose deformity
- Lower respiratory tract: dyspnea and hemoptysis
- CXR shows single or multiple rounded and cavitary lesions

C-ANCA (PR3-ANCA) is positive in > 90% (highly specific) of cases; it is rare in Microscopic polyangiitis. pANCA (MPO-ANCA) positive in 25%

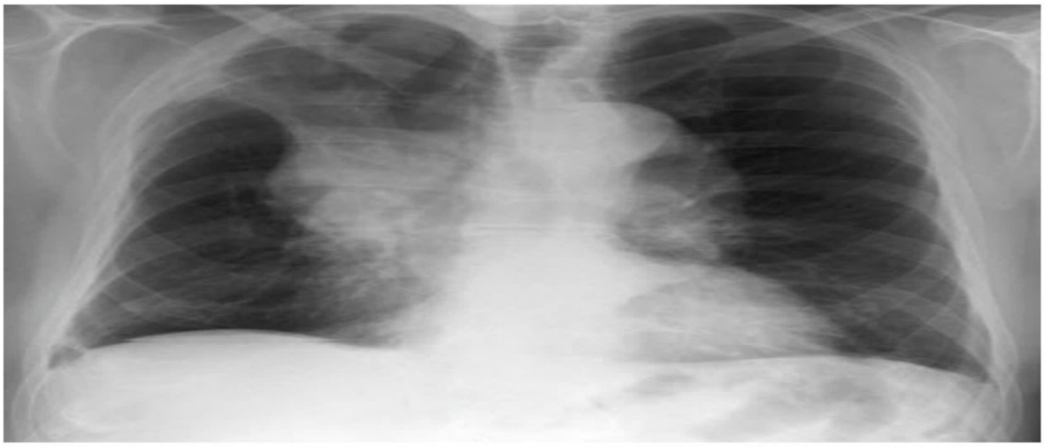
Question 142 of 231

Question Difficulty: Hard

Mr. X is complaining of presents with chronic cough, hemoptysis and weight loss. His CXR shows a cavitating lesion.

CXR is shown in the image. Bronchoscopy and biopsy confirm the diagnosis of carcinoma of bronchus. Investigations show:

Serum creatinine	96 mmol/L	(53-106 mmol/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	3.6 mmol/L	(3.5-5.0 mmol/L)
Serum calcium	3 mmol/L	(2.1-2.8 mmol/L)



What is the most likely diagnosis?

○ Squamous cell carcinoma
○ Alveolar cell carcinoma
○ Undifferentiated large cell carcinoma
○ Adenocarcinoma
● Small cell carcinoma

Description

Squamous cell cancer is the most common lung tumor. It is typically presented with central cavitating tumor. It is usually a central tumor. It is strongly associated with finger clubbing.

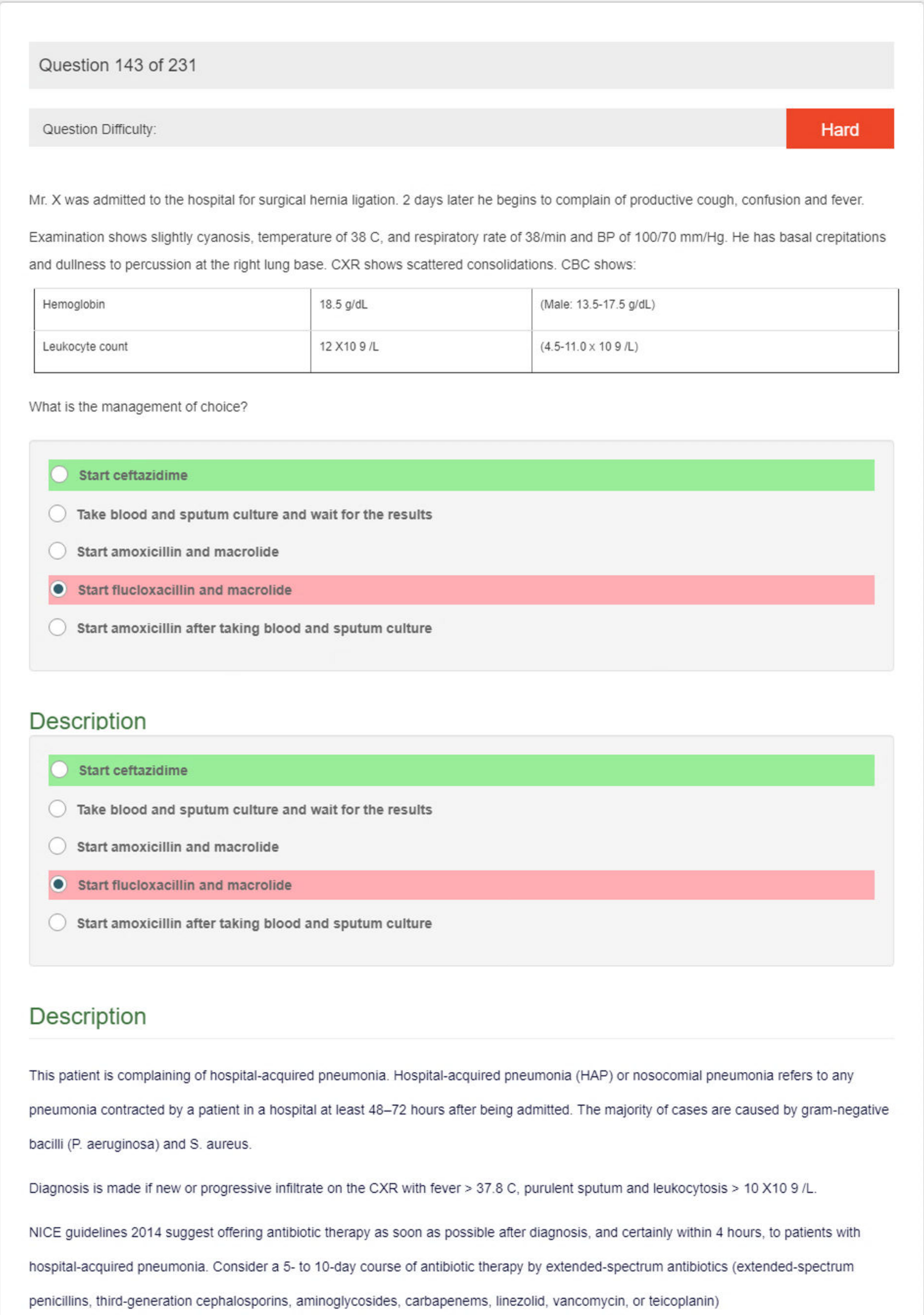
Paraneoplastic features:

- Ectopic PTH secretion causing hypercalcemia and hypertrophic pulmonary osteoarthropathy
- Hyperthyroidism

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 141 ✓ **Correct**: 25 ✕ **Incorrect**: 116 **Average Score**: 17.73 %



Question 143 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the hospital for surgical hernia ligation. 2 days later he begins to complain of productive cough, confusion and fever.

Examination shows slightly cyanosis, temperature of 38 C, and respiratory rate of 38/min and BP of 100/70 mm/Hg. He has basal crepitations and dullness to percussion at the right lung base. CXR shows scattered consolidations. CBC shows:

Hemoglobin	18.5 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 X10 9 /L	(4.5-11.0 x 10 9 /L)

What is the management of choice?

- ○ **Start ceftazidime**
- ○ **Take blood and sputum culture and wait for the results**
- ○ **Start amoxicillin and macrolide**
- ● **Start flucloxacillin and macrolide**
- ○ **Start amoxicillin after taking blood and sputum culture**

Description

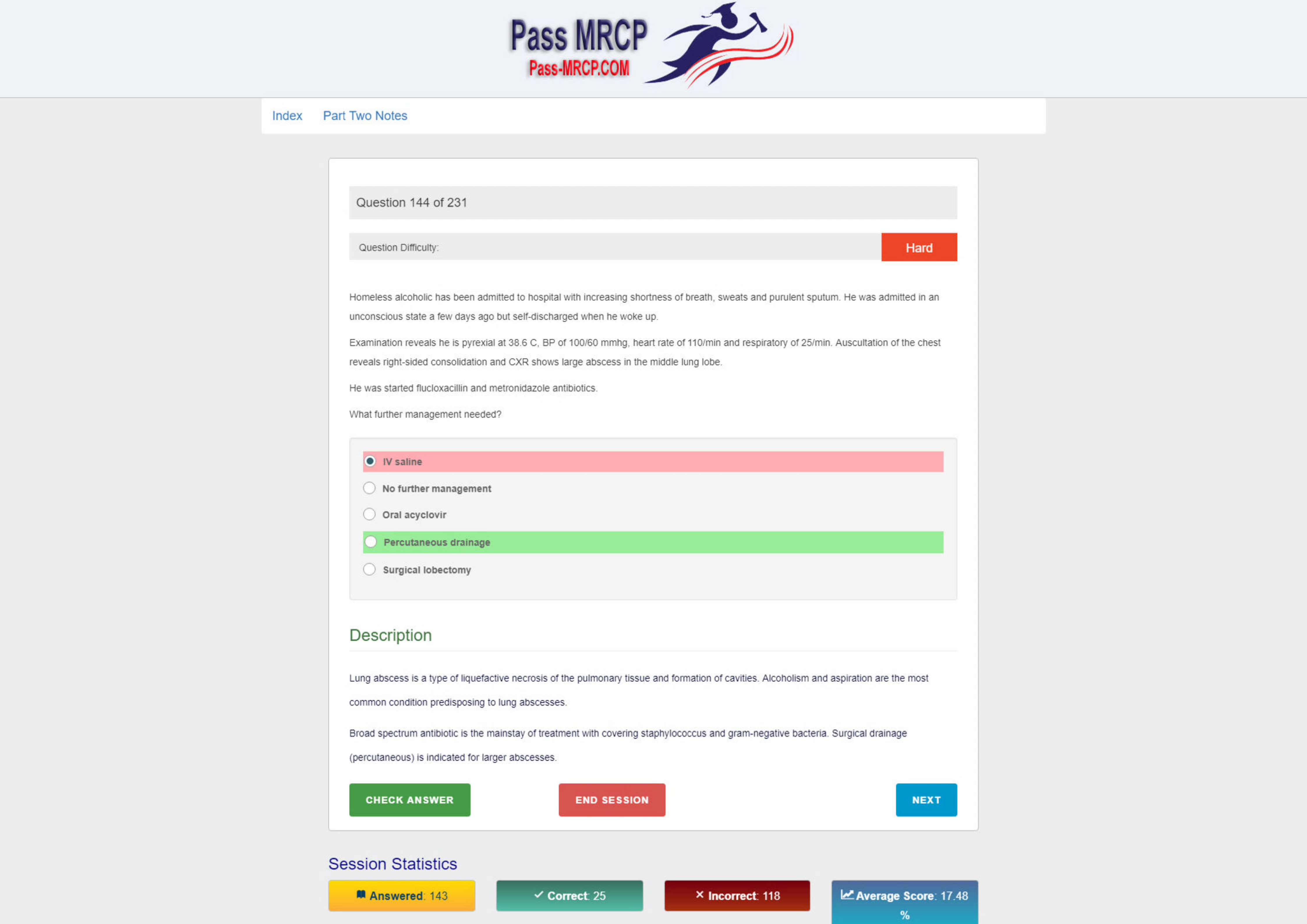
- ○ **Start ceftazidime**
- ○ **Take blood and sputum culture and wait for the results**
- ○ **Start amoxicillin and macrolide**
- ● **Start flucloxacillin and macrolide**
- ○ **Start amoxicillin after taking blood and sputum culture**

Description

This patient is complaining of hospital-acquired pneumonia. Hospital-acquired pneumonia (HAP) or nosocomial pneumonia refers to any pneumonia contracted by a patient in a hospital at least 48–72 hours after being admitted. The majority of cases are caused by gram-negative bacilli (P. aeruginosa) and S. aureus.

Diagnosis is made if new or progressive infiltrate on the CXR with fever > 37.8 C, purulent sputum and leukocytosis > 10 X10 9 /L.

NICE guidelines 2014 suggest offering antibiotic therapy as soon as possible after diagnosis, and certainly within 4 hours, to patients with hospital-acquired pneumonia. Consider a 5- to 10-day course of antibiotic therapy by extended-spectrum antibiotics (extended-spectrum penicillins, third-generation cephalosporins, aminoglycosides, carbapenems, linezolid, vancomycin, or teicoplanin)



Question 144 of 231

Question Difficulty: **Hard**

Homeless alcoholic has been admitted to hospital with increasing shortness of breath, sweats and purulent sputum. He was admitted in an unconscious state a few days ago but self-discharged when he woke up.

Examination reveals he is pyrexial at 38.6 C, BP of 100/60 mmhg, heart rate of 110/min and respiratory of 25/min. Auscultation of the chest reveals right-sided consolidation and CXR shows large abscess in the middle lung lobe.

He was started flucloxacillin and metronidazole antibiotics.

What further management needed?

- ● **IV saline**
- ○ **No further management**
- ○ **Oral acyclovir**
- ○ **Percutaneous drainage**
- ○ **Surgical lobectomy**

Description

Lung abscess is a type of liquefactive necrosis of the pulmonary tissue and formation of cavities. Alcoholism and aspiration are the most common condition predisposing to lung abscesses.

Broad spectrum antibiotic is the mainstay of treatment with covering staphylococcus and gram-negative bacteria. Surgical drainage (percutaneous) is indicated for larger abscesses.

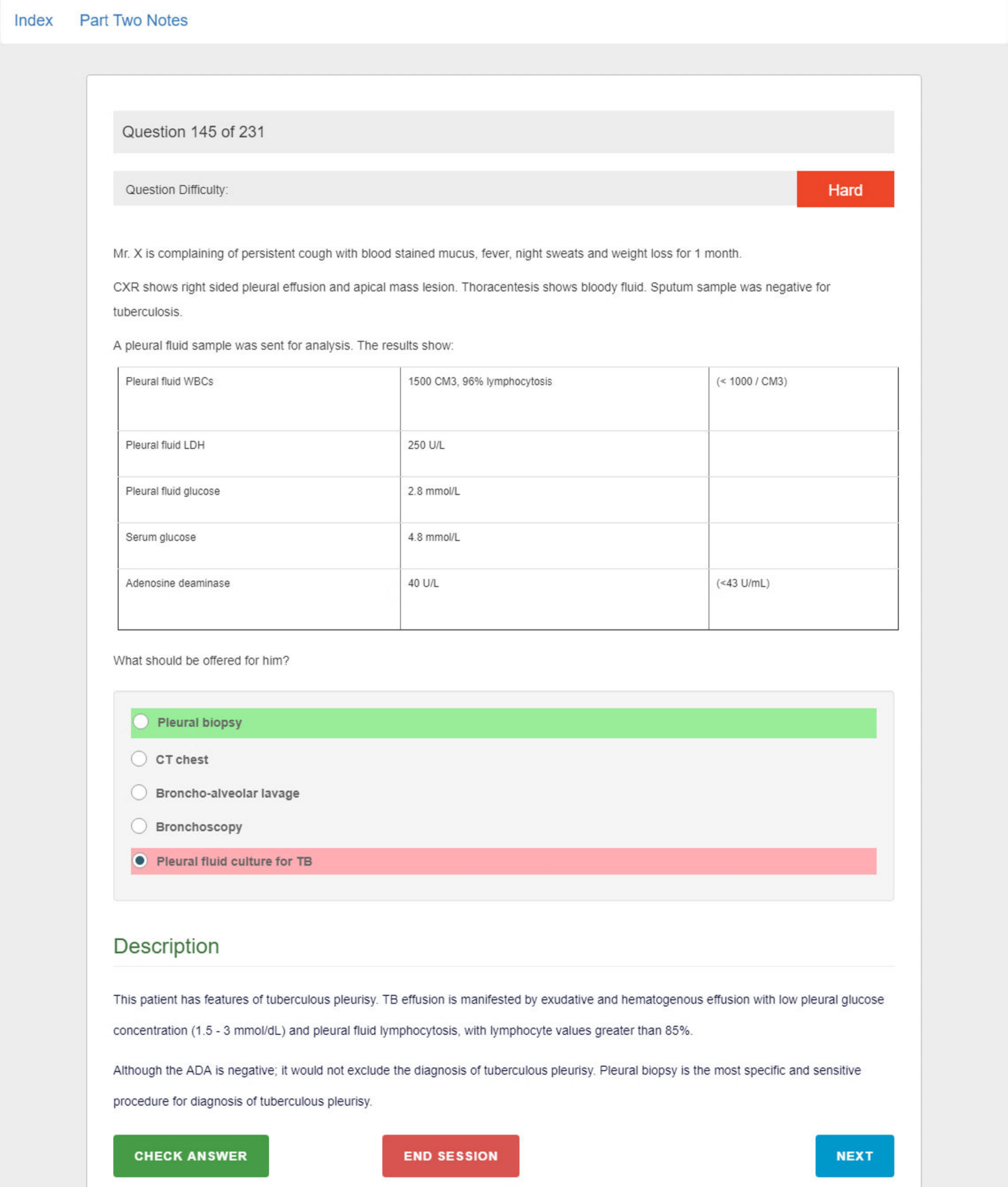
Session Statistics

Answered: 143

✓ **Correct**: 25

✕ **Incorrect**: 118

Average Score: 17.48 %



Question 145 of 231

Question Difficulty: **Hard**

Mr. X is complaining of persistent cough with blood stained mucus, fever, night sweats and weight loss for 1 month.

CXR shows right sided pleural effusion and apical mass lesion. Thoracentesis shows bloody fluid. Sputum sample was negative for tuberculosis.

A pleural fluid sample was sent for analysis. The results show:

Pleural fluid WBCs	1500 CM3, 96% lymphocytosis	(< 1000 / CM3)
Pleural fluid LDH	250 U/L	
Pleural fluid glucose	2.8 mmol/L	
Serum glucose	4.8 mmol/L	
Adenosine deaminase	40 U/L	(<43 U/mL)

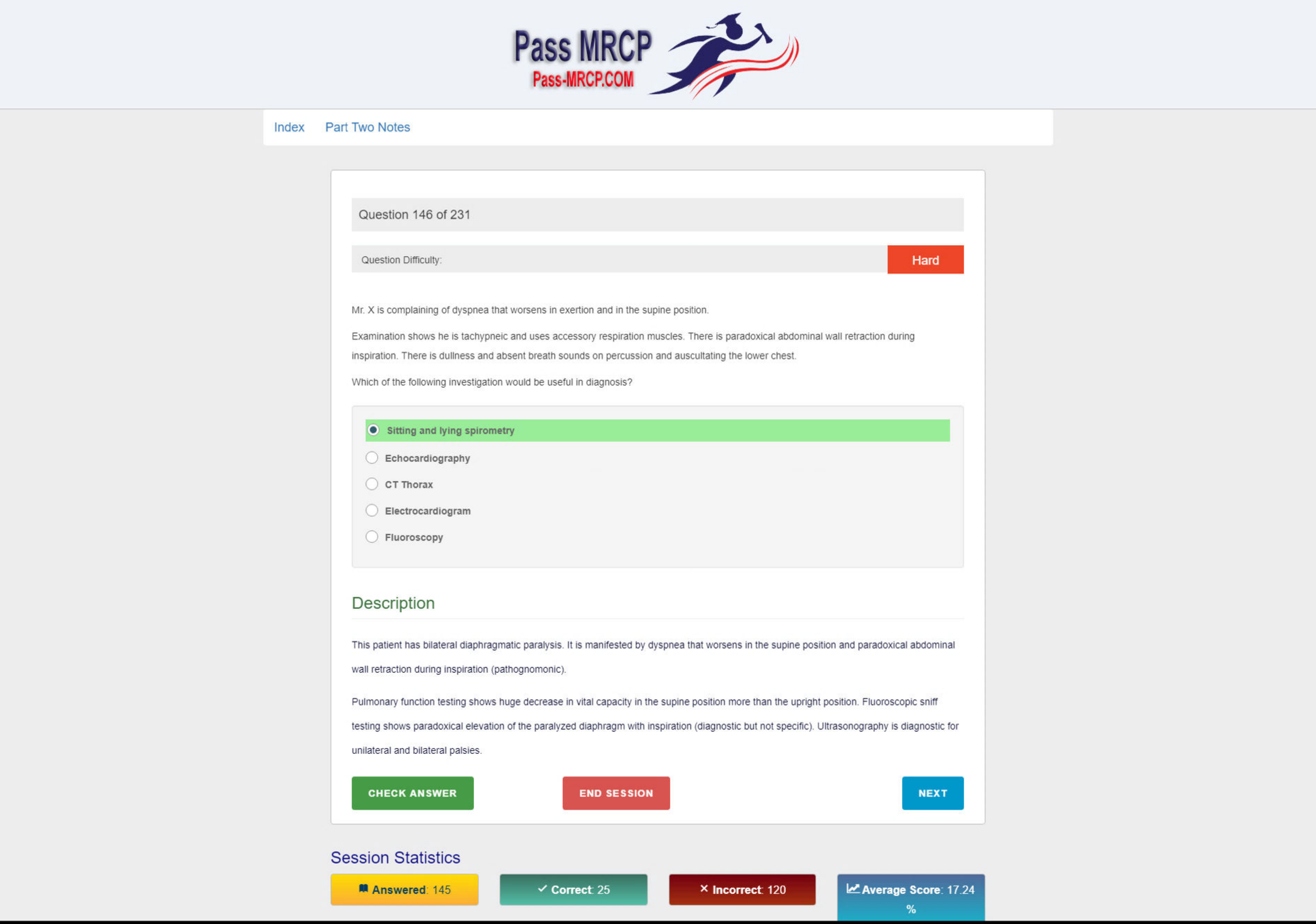
What should be offered for him?

- ○ **Pleural biopsy**
- ○ **CT chest**
- ○ **Broncho-alveolar lavage**
- ○ **Bronchoscopy**
- ● **Pleural fluid culture for TB**

Description

This patient has features of tuberculous pleurisy. TB effusion is manifested by exudative and hematogenous effusion with low pleural glucose concentration (1.5 - 3 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte values greater than 85%.

Although the ADA is negative; it would not exclude the diagnosis of tuberculous pleurisy. Pleural biopsy is the most specific and sensitive procedure for diagnosis of tuberculous pleurisy.



Question 146 of 231

Question Difficulty: Hard

Mr. X is complaining of dyspnea that worsens in exertion and in the supine position.

Examination shows he is tachypneic and uses accessory respiration muscles. There is paradoxical abdominal wall retraction during inspiration. There is dullness and absent breath sounds on percussion and auscultating the lower chest.

Which of the following investigation would be useful in diagnosis?

- ● Sitting and lying spirometry
- ○ Echocardiography
- ○ CT Thorax
- ○ Electrocardiogram
- ○ Fluoroscopy

Description

This patient has bilateral diaphragmatic paralysis. It is manifested by dyspnea that worsens in the supine position and paradoxical abdominal wall retraction during inspiration (pathognomonic).

Pulmonary function testing shows huge decrease in vital capacity in the supine position more than the upright position. Fluoroscopic sniff testing shows paradoxical elevation of the paralyzed diaphragm with inspiration (diagnostic but not specific). Ultrasonography is diagnostic for unilateral and bilateral palsies.

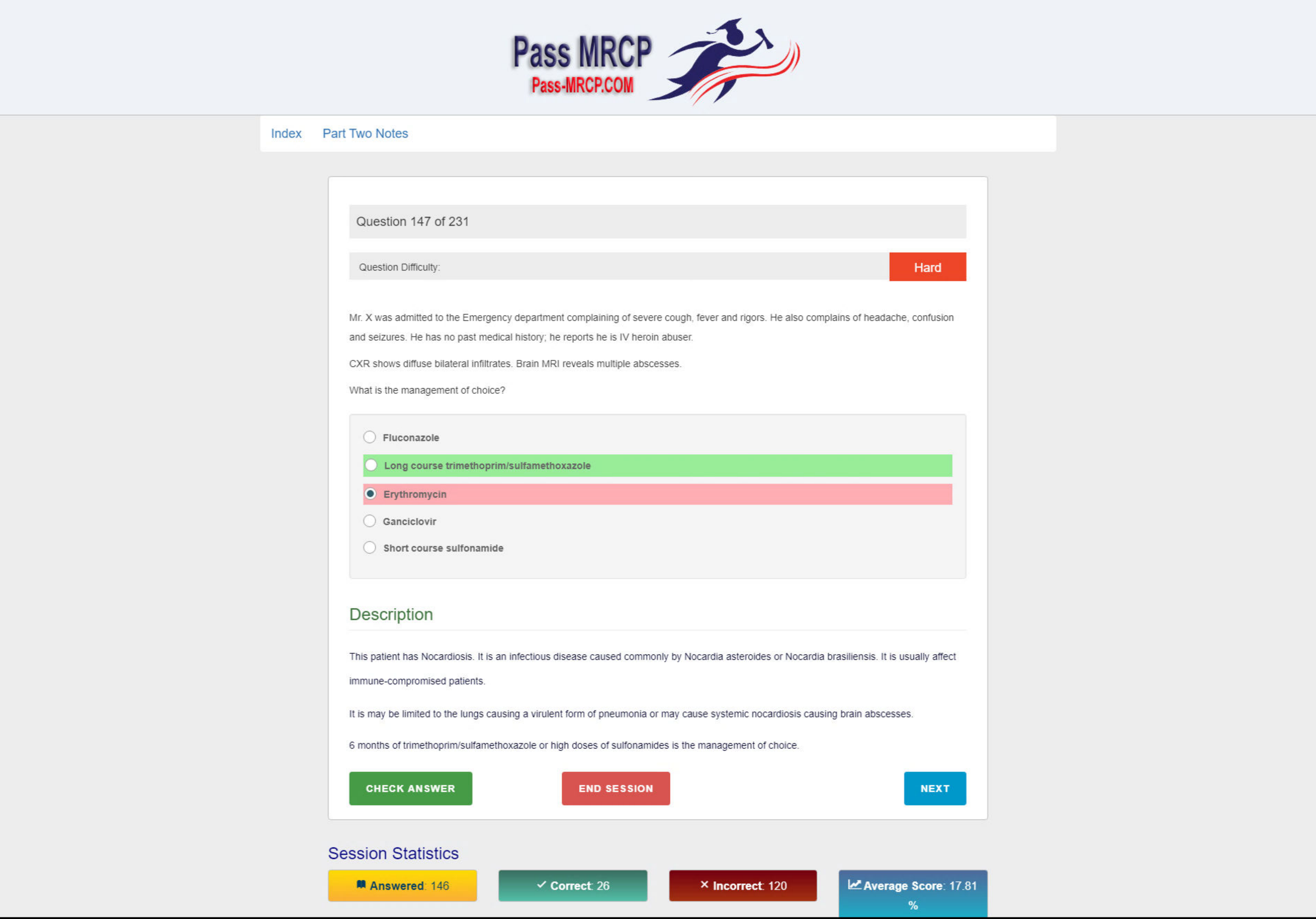
Session Statistics

Answered: 145

✓ Correct: 25

✕ Incorrect: 120

Average Score: 17.24 %



Question 147 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the Emergency department complaining of severe cough, fever and rigors. He also complains of headache, confusion and seizures. He has no past medical history; he reports he is IV heroin abuser.

CXR shows diffuse bilateral infiltrates. Brain MRI reveals multiple abscesses.

What is the management of choice?

- ○ **Fluconazole**
- ○ **Long course trimethoprim/sulfamethoxazole**
- ● **Erythromycin**
- ○ **Ganciclovir**
- ○ **Short course sulfonamide**

Description

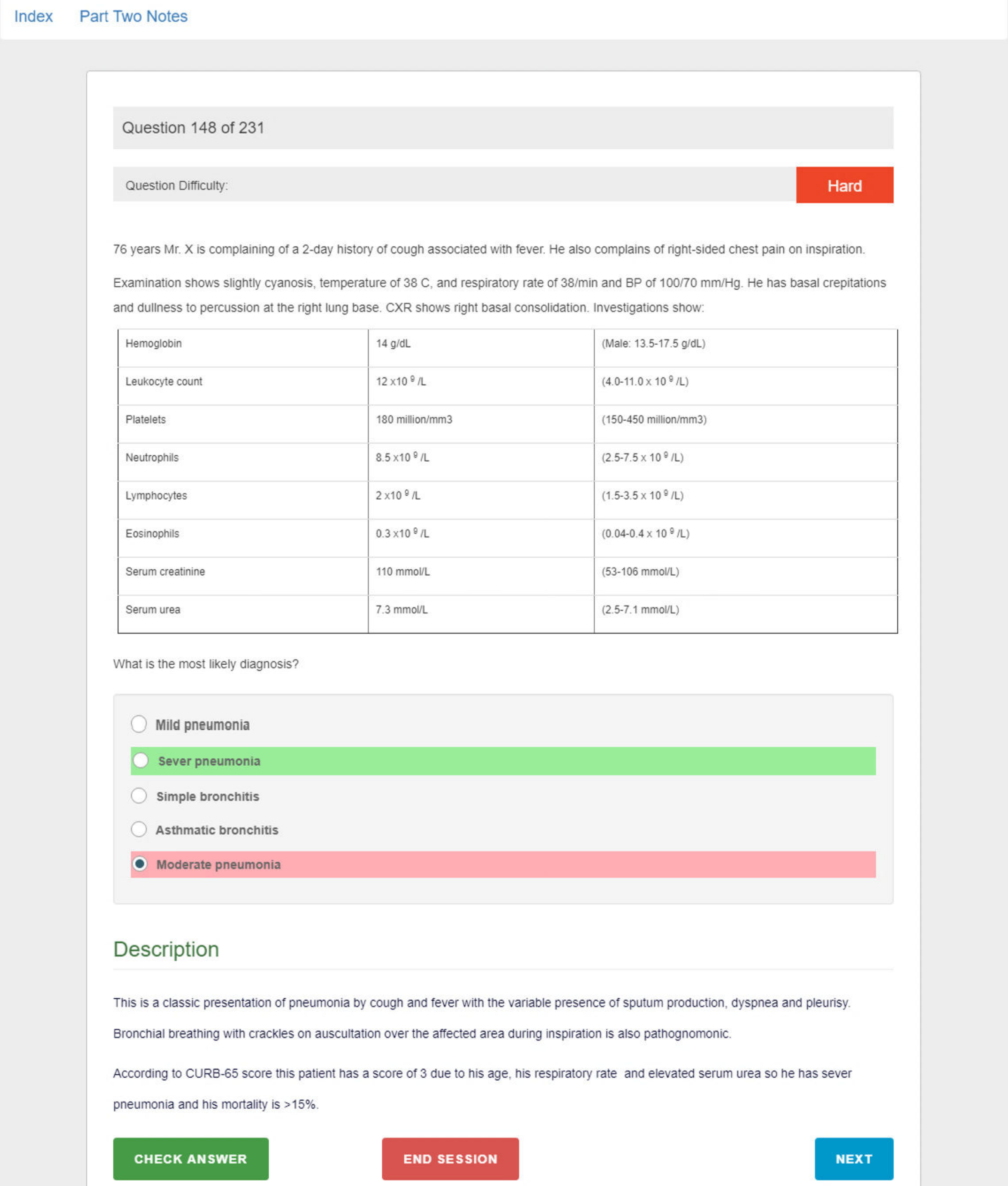
This patient has Nocardiosis. It is an infectious disease caused commonly by Nocardia asteroides or Nocardia brasiliensis. It is usually affect immune-compromised patients.

It is may be limited to the lungs causing a virulent form of pneumonia or may cause systemic nocardiosis causing brain abscesses.

6 months of trimethoprim/sulfamethoxazole or high doses of sulfonamides is the management of choice.

Session Statistics

Answered: 146
✓ **Correct**: 26
✕ **Incorrect**: 120
Average Score: 17.81 %



Question 148 of 231

76 years Mr. X is complaining of a 2-day history of cough associated with fever. He also complains of right-sided chest pain on inspiration.

Examination shows slightly cyanosis, temperature of 38 C, and respiratory rate of 38/min and BP of 100/70 mm/Hg. He has basal crepitations and dullness to percussion at the right lung base. CXR shows right basal consolidation. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	2 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.3 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)
Serum creatinine	110 mmol/L	(53-106 mmol/L)
Serum urea	7.3 mmol/L	(2.5-7.1 mmol/L)

What is the most likely diagnosis?

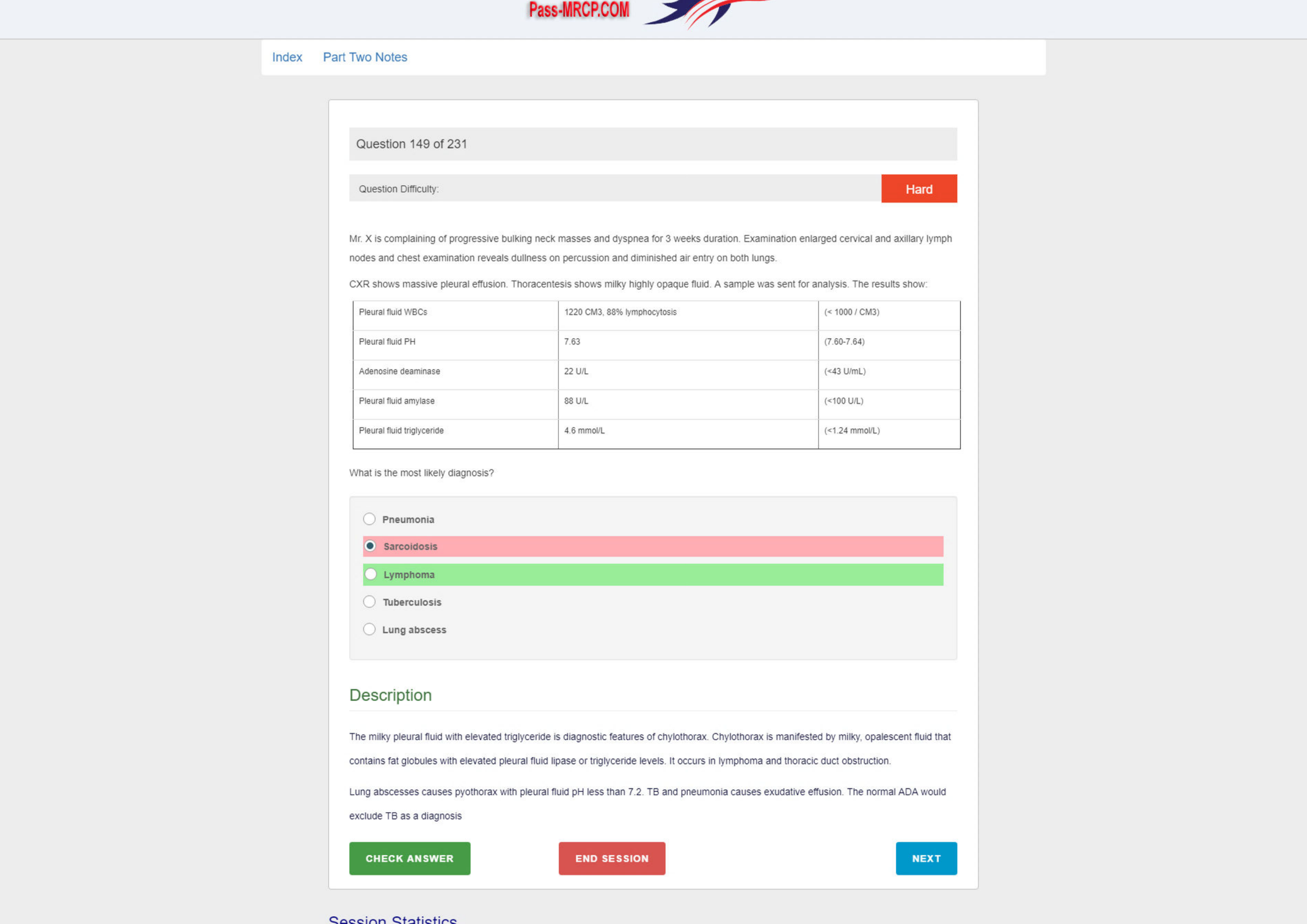
- ○ **Mild pneumonia**
- ○ **Sever pneumonia**
- ○ **Simple bronchitis**
- ○ **Asthmatic bronchitis**
- ● **Moderate pneumonia**

Description

This is a classic presentation of pneumonia by cough and fever with the variable presence of sputum production, dyspnea and pleurisy.

Bronchial breathing with crackles on auscultation over the affected area during inspiration is also pathognomonic.

According to CURB-65 score this patient has a score of 3 due to his age, his respiratory rate and elevated serum urea so he has sever pneumonia and his mortality is >15%.



Question 149 of 231

Question Difficulty: **Hard**

Mr. X is complaining of progressive bulking neck masses and dyspnea for 3 weeks duration. Examination enlarged cervical and axillary lymph nodes and chest examination reveals dullness on percussion and diminished air entry on both lungs.

CXR shows massive pleural effusion. Thoracentesis shows milky highly opaque fluid. A sample was sent for analysis. The results show:

Pleural fluid WBCs	1220 CM3, 88% lymphocytosis	(< 1000 / CM3)
Pleural fluid PH	7.63	(7.60-7.64)
Adenosine deaminase	22 U/L	(<43 U/mL)
Pleural fluid amylase	88 U/L	(<100 U/L)
Pleural fluid triglyceride	4.6 mmol/L	(<1.24 mmol/L)

What is the most likely diagnosis?

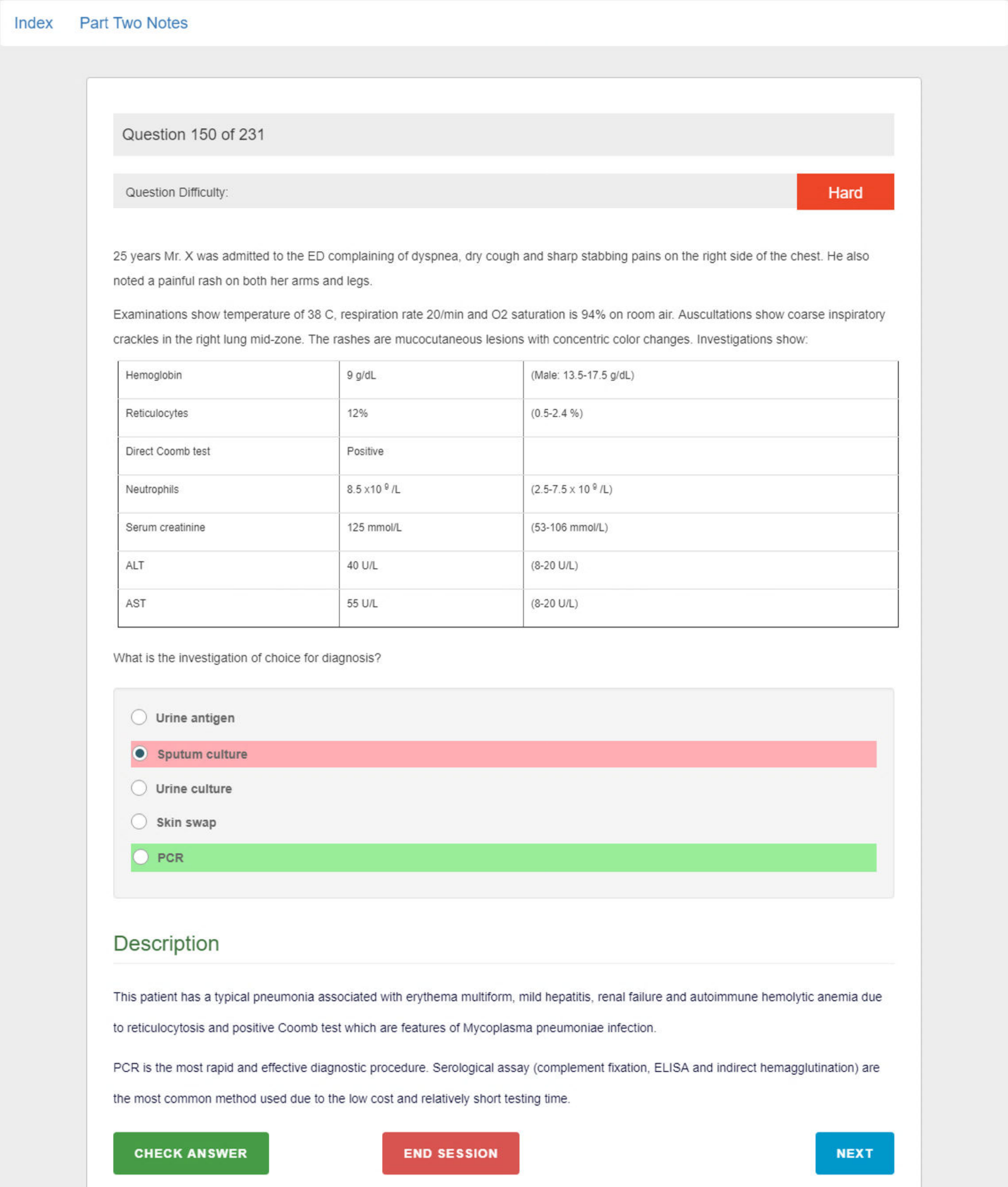
- ○ **Pneumonia**
- ● **Sarcoidosis**
- ○ **Lymphoma**
- ○ **Tuberculosis**
- ○ **Lung abscess**

Description

The milky pleural fluid with elevated triglyceride is diagnostic features of chylothorax. Chylothorax is manifested by milky, opalescent fluid that contains fat globules with elevated pleural fluid lipase or triglyceride levels. It occurs in lymphoma and thoracic duct obstruction.

Lung abscesses causes pyothorax with pleural fluid pH less than 7.2. TB and pneumonia causes exudative effusion. The normal ADA would exclude TB as a diagnosis

Session Statistics



Question 150 of 231

Question Difficulty: Hard

25 years Mr. X was admitted to the ED complaining of dyspnea, dry cough and sharp stabbing pains on the right side of the chest. He also noted a painful rash on both her arms and legs.

Examinations show temperature of 38 C, respiration rate 20/min and O2 saturation is 94% on room air. Auscultations show coarse inspiratory crackles in the right lung mid-zone. The rashes are mucocutaneous lesions with concentric color changes. Investigations show:

Hemoglobin	9 g/dL	(Male: 13.5-17.5 g/dL)
Reticulocytes	12%	(0.5-2.4 %)
Direct Coomb test	Positive	
Neutrophils	8.5 x10^9/L	(2.5-7.5 x 10^9/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ALT	40 U/L	(8-20 U/L)
AST	55 U/L	(8-20 U/L)

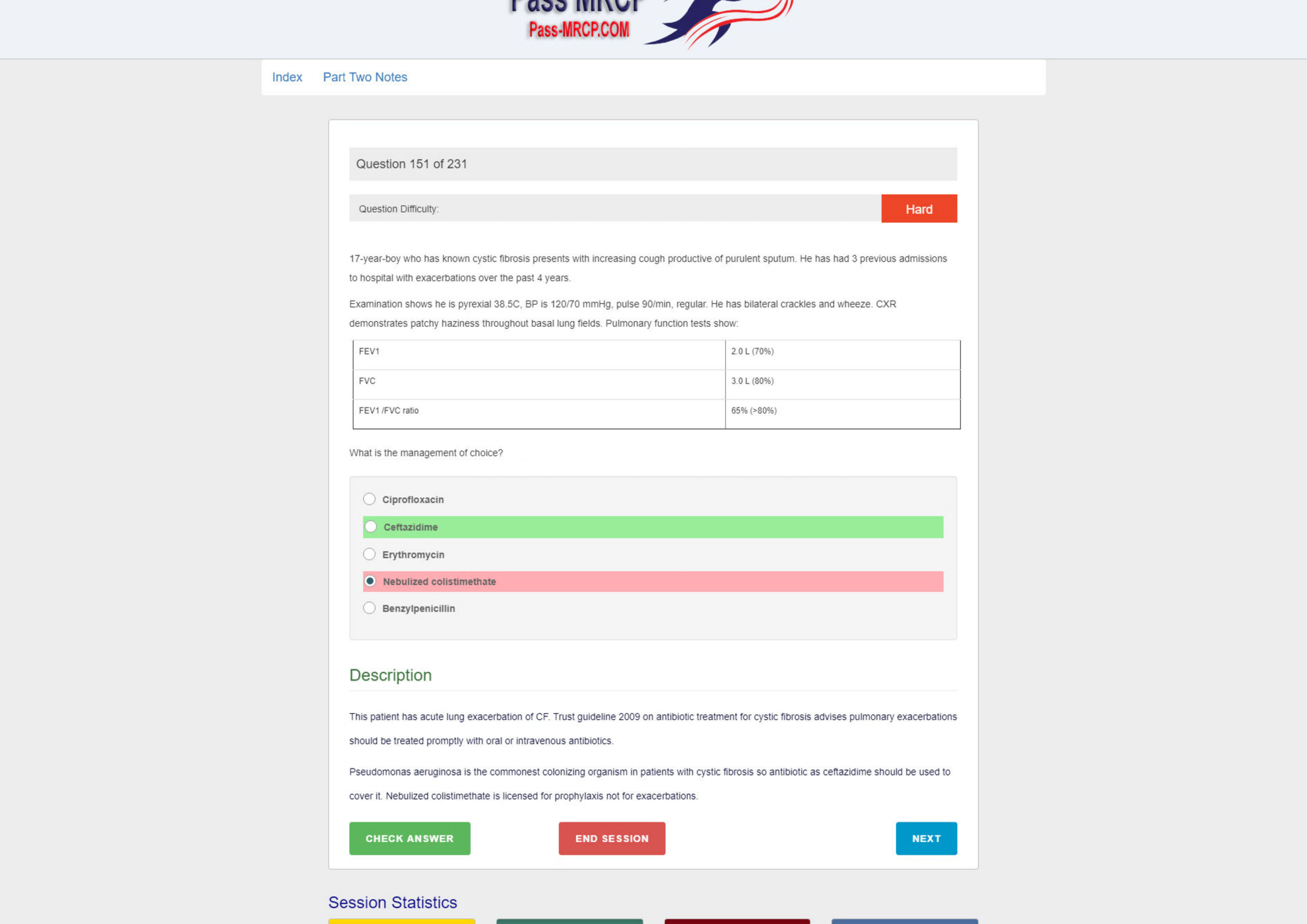
What is the investigation of choice for diagnosis?

- ○ **Urine antigen**
- ● **Sputum culture**
- ○ **Urine culture**
- ○ **Skin swap**
- ○ **PCR**

Description

This patient has a typical pneumonia associated with erythema multiform, mild hepatitis, renal failure and autoimmune hemolytic anemia due to reticulocytosis and positive Coomb test which are features of Mycoplasma pneumoniae infection.

PCR is the most rapid and effective diagnostic procedure. Serological assay (complement fixation, ELISA and indirect hemagglutination) are the most common method used due to the low cost and relatively short testing time.



Question 151 of 231

Question Difficulty: Hard

17-year-boy who has known cystic fibrosis presents with increasing cough productive of purulent sputum. He has had 3 previous admissions to hospital with exacerbations over the past 4 years.

Examination shows he is pyrexial 38.5C, BP is 120/70 mmHg, pulse 90/min, regular. He has bilateral crackles and wheeze. CXR demonstrates patchy haziness throughout basal lung fields. Pulmonary function tests show:

FEV1	2.0 L (70%)
FVC	3.0 L (80%)
FEV1 /FVC ratio	65% (>80%)

What is the management of choice?

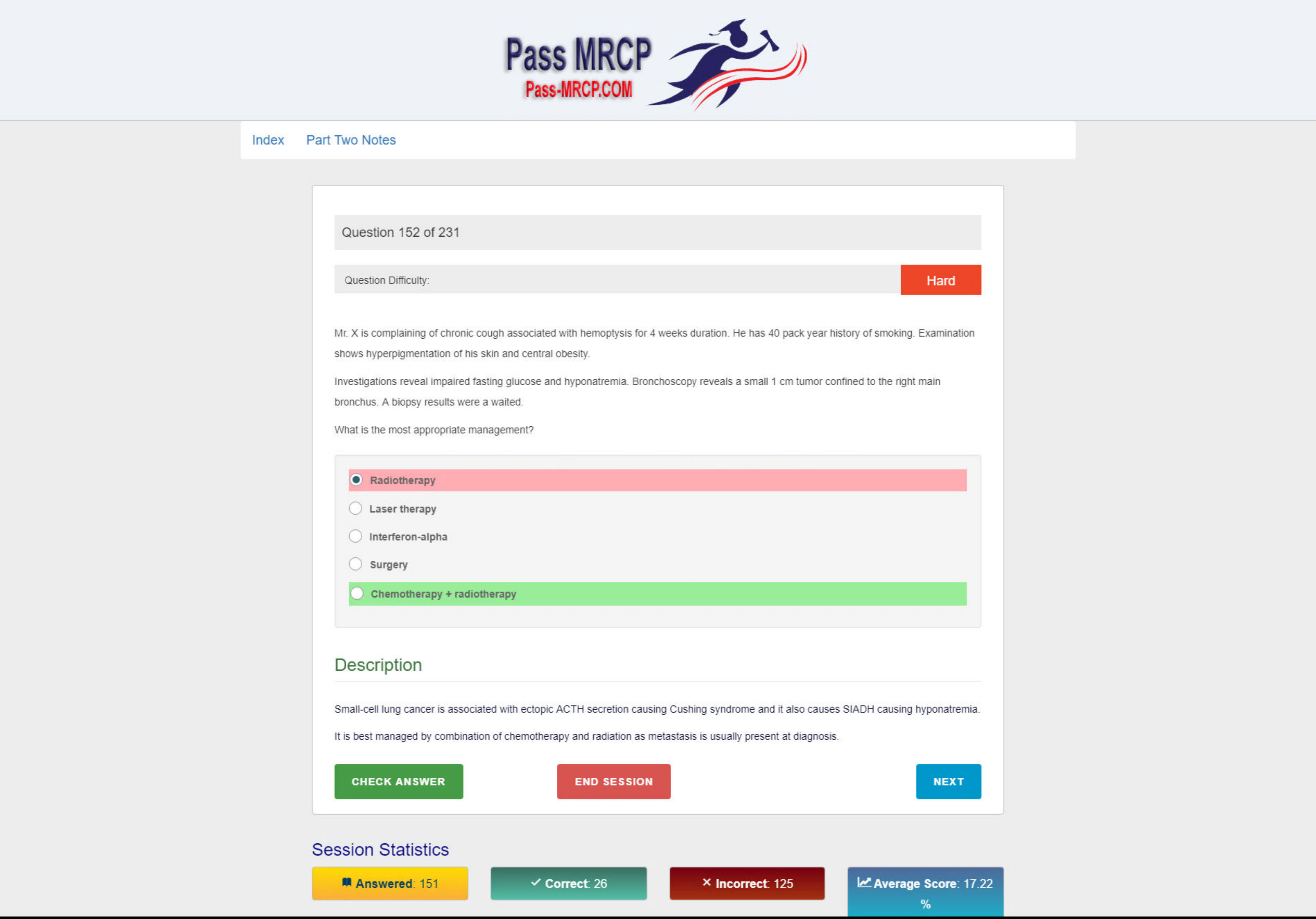
- ○ Ciprofloxacin
- ○ Ceftazidime
- ○ Erythromycin
- ● Nebulized colistimethate
- ○ Benzylpenicillin

Description

This patient has acute lung exacerbation of CF. Trust guideline 2009 on antibiotic treatment for cystic fibrosis advises pulmonary exacerbations should be treated promptly with oral or intravenous antibiotics.

Pseudomonas aeruginosa is the commonest colonizing organism in patients with cystic fibrosis so antibiotic as ceftazidime should be used to cover it. Nebulized colistimethate is licensed for prophylaxis not for exacerbations.

Session Statistics



Question 152 of 231

Question Difficulty: Hard

Mr. X is complaining of chronic cough associated with hemoptysis for 4 weeks duration. He has 40 pack year history of smoking. Examination shows hyperpigmentation of his skin and central obesity.

Investigations reveal impaired fasting glucose and hyponatremia. Bronchoscopy reveals a small 1 cm tumor confined to the right main bronchus. A biopsy results were a waited.

What is the most appropriate management?

- ● Radiotherapy
- ○ Laser therapy
- ○ Interferon-alpha
- ○ Surgery
- ○ Chemotherapy + radiotherapy

Description

Small-cell lung cancer is associated with ectopic ACTH secretion causing Cushing syndrome and it also causes SIADH causing hyponatremia.

It is best managed by combination of chemotherapy and radiation as metastasis is usually present at diagnosis.

Session Statistics

Answered: 151

✓ Correct: 26

✕ Incorrect: 125

Average Score: 17.22 %

Question 153 of 231

Question Difficulty: **Hard**

67 years Mr. X was admitted to the ED due to productive cough, fever and chest pain for 2 days. He was requested a CXR which confirmed bilateral bronchopneumonia.

Examination shows he is confused with temp of 35.5 C, RR 32/min and BP of 80/45 mmhg. His O2 saturation was 88 on room air.

Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	2 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.3 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	10.3 mmol/L	(2.5-7.1 mmol/L)

What is the management of choice?

- ● **ICU admission with flucloxacillin and azithromycin for 8 days**
- ○ **Hospital admission with amoxicillin and azithromycin for 5 days**
- ○ **Oral amoxicillin and azithromycin at home and repeat CXR in 7 days**
- ○ **ICU admission with amoxicillin and azithromycin for 10 days**
- ○ **ICU admission with IV ceftazidime for 5 days**

Description

NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1
Age>=65	1

According to CURB-65 score this patient has a score of5 he has sever pneumonia and his mortality is >15%.

He must have intensive care assessment and management is by 7-10 day course of dual antibiotic therapy with beta-lactamase and a macrolide.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 152 ✓ **Correct**: 26 ✕ **Incorrect**: 126 **Average Score**: 17.11 %

Question 154 of 231

Question Difficulty: **Hard**

Mr. X is complaining of chronic cough, hemoptysis and weight loss. He has a 60-pack year history. CXR shows left upper lobe lung mass.

Investigation reveals hypercalcemia. Trans-bronchial biopsy confirms this to be a squamous cell carcinoma of the bronchus. CT scan shows no evidence of lymph node, pleural or rib involvement. Spirometry shows FEV1 was 1.6 L and post bronchodilator FEV1 was 1.8 L.

Which of the following represents the most appropriate management in this case?

● **Refer for arterial embolization**

○ **Refer for combined chemo- and radiotherapy**

○ **Refer for mass sclerotherapy**

○ **Refer for left pneumonectomy**

○ **Refer for left upper lobectomy**

Description

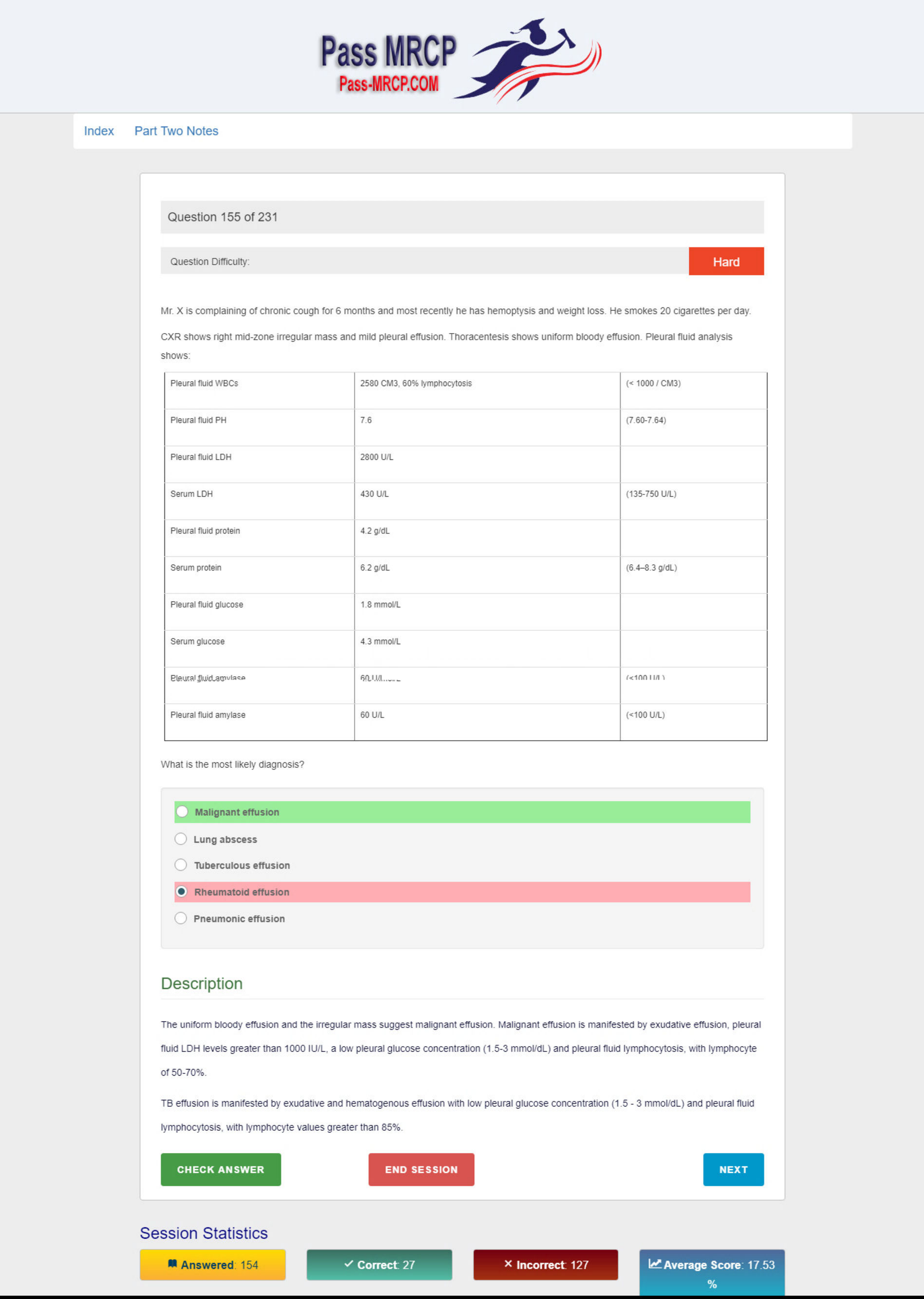
Although the spirometry shows FEV1 >1.5 L; post bronchodilator FEV1 was < 2 L which makes a contraindication for resection. Combined chemo- and radiotherapy would be a suitable alternative.

Surgery contraindications include:

- Stage IIIB or IV
- FEV1 < 1.5 liters or Patients who have an FEV1 of less than 2.0 liters post bronchodilators
- Malignant pleural effusion
- Tumor near hilum
- Vocal cord paralysis
- Myocardial infarction within 6 weeks
- SVC obstruction

CHECK ANSWER END SESSION NEXT

Session Statistics



Question 155 of 231

Question Difficulty: **Hard**

Mr. X is complaining of chronic cough for 6 months and most recently he has hemoptysis and weight loss. He smokes 20 cigarettes per day.

CXR shows right mid-zone irregular mass and mild pleural effusion. Thoracentesis shows uniform bloody effusion. Pleural fluid analysis shows:

Pleural fluid WBCs	2580 CM3, 60% lymphocytosis	(< 1000 / CM3)
Pleural fluid PH	7.6	(7.60-7.64)
Pleural fluid LDH	2800 U/L	
Serum LDH	430 U/L	(135-750 U/L)
Pleural fluid protein	4.2 g/dL	
Serum protein	6.2 g/dL	(6.4–8.3 g/dL)
Pleural fluid glucose	1.8 mmol/L	
Serum glucose	4.3 mmol/L	
Pleural fluid amylase	60 U/L	(<100 U/L)
Pleural fluid amylase	60 U/L	(<100 U/L)

What is the most likely diagnosis?

○ **Malignant effusion**
○ **Lung abscess**
○ **Tuberculous effusion**
● **Rheumatoid effusion**
○ **Pneumonic effusion**

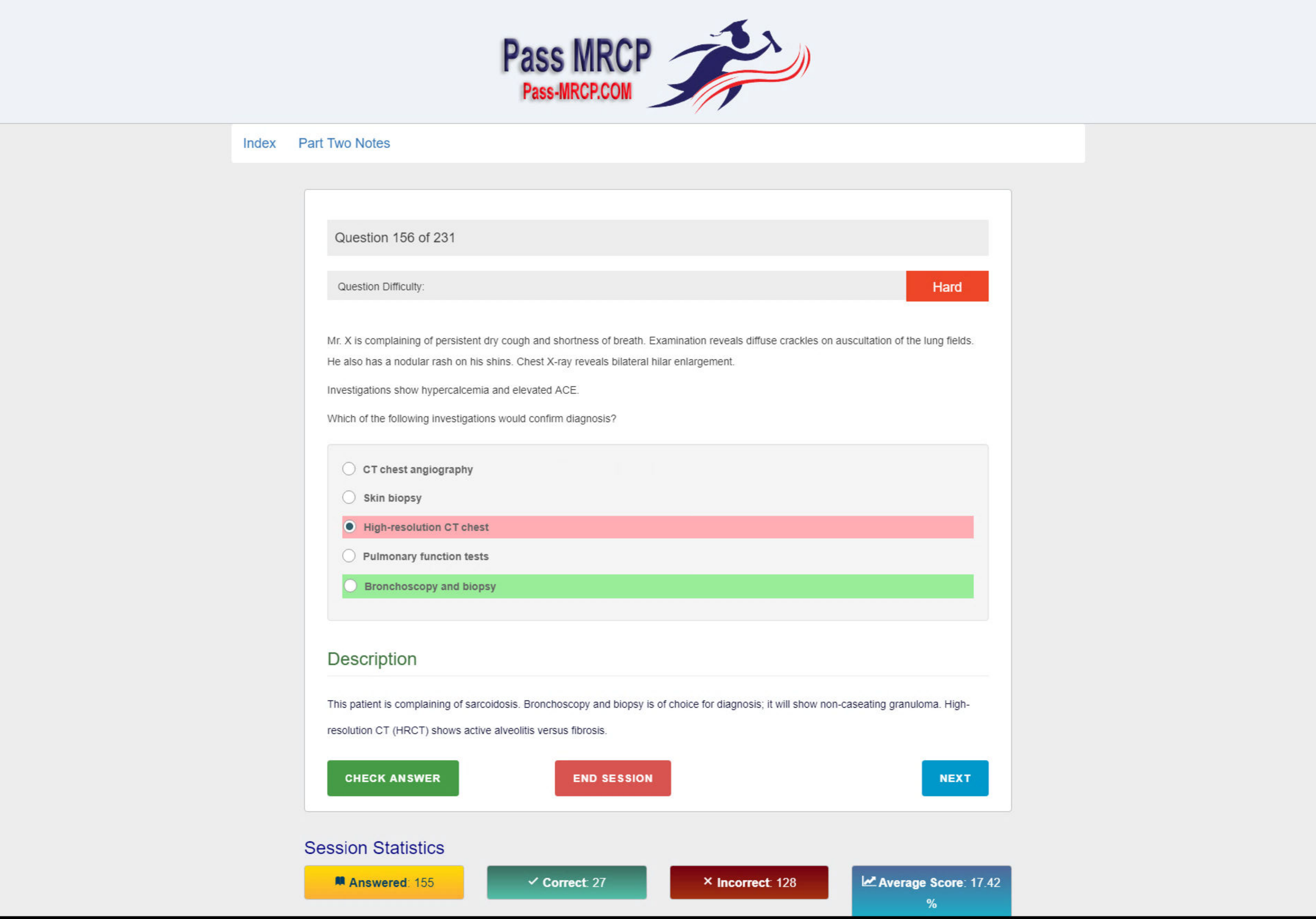
Description

The uniform bloody effusion and the irregular mass suggest malignant effusion. Malignant effusion is manifested by exudative effusion, pleural fluid LDH levels greater than 1000 IU/L, a low pleural glucose concentration (1.5-3 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte of 50-70%.

TB effusion is manifested by exudative and hematogenous effusion with low pleural glucose concentration (1.5 - 3 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte values greater than 85%.

Session Statistics

Answered: 154
✓ **Correct**: 27
✕ **Incorrect**: 127
Average Score: 17.53 %



Question 156 of 231

Question Difficulty: **Hard**

Mr. X is complaining of persistent dry cough and shortness of breath. Examination reveals diffuse crackles on auscultation of the lung fields. He also has a nodular rash on his shins. Chest X-ray reveals bilateral hilar enlargement.

Investigations show hypercalcemia and elevated ACE.

Which of the following investigations would confirm diagnosis?

- ○ **CT chest angiography**
- ○ **Skin biopsy**
- ● **High-resolution CT chest**
- ○ **Pulmonary function tests**
- ○ **Bronchoscopy and biopsy**

Description

This patient is complaining of sarcoidosis. Bronchoscopy and biopsy is of choice for diagnosis; it will show non-caseating granuloma. High-resolution CT (HRCT) shows active alveolitis versus fibrosis.

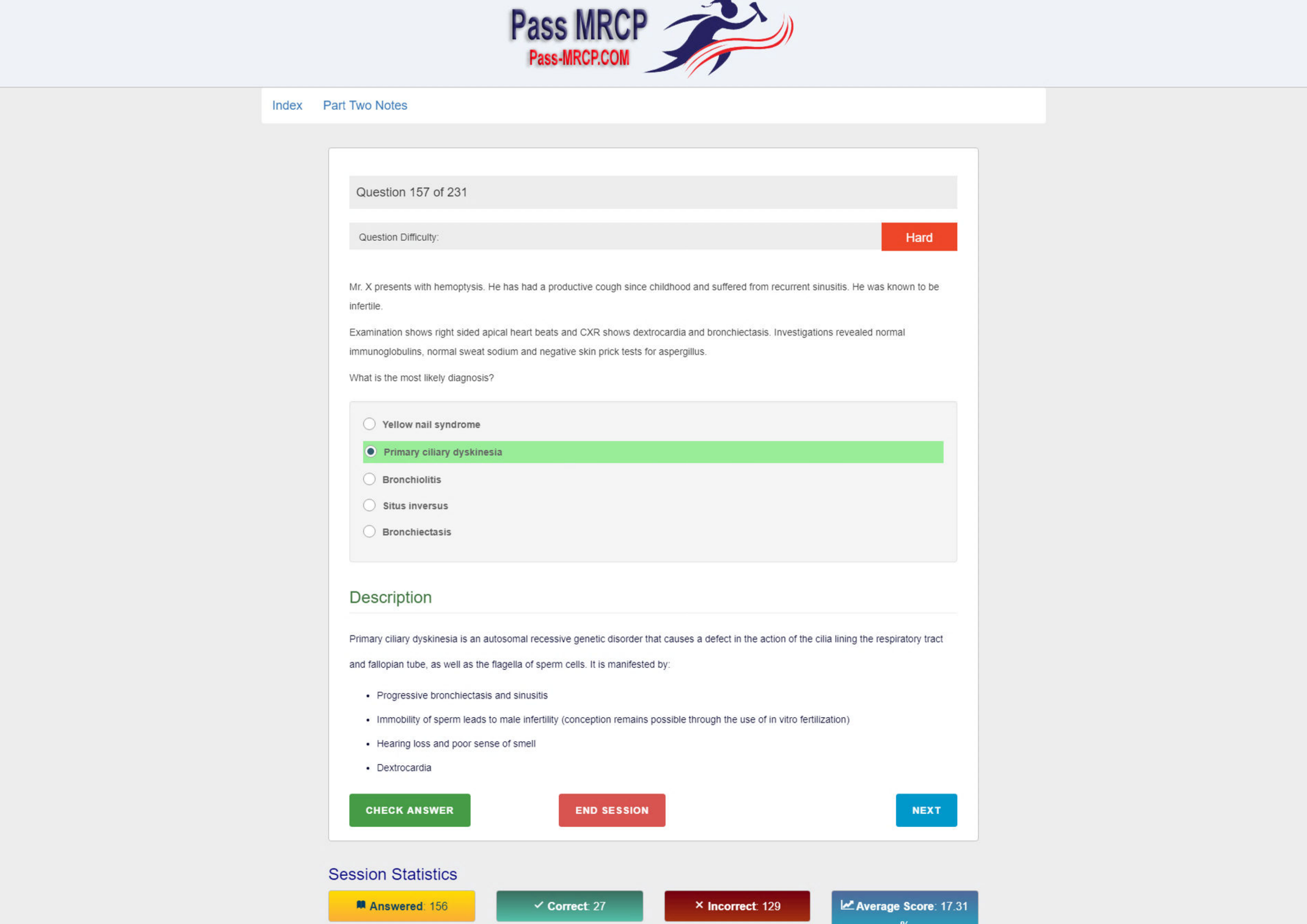
Session Statistics

Answered: 155

✓ **Correct**: 27

✕ **Incorrect**: 128

Average Score: 17.42 %



Question 157 of 231

Question Difficulty: **Hard**

Mr. X presents with hemoptysis. He has had a productive cough since childhood and suffered from recurrent sinusitis. He was known to be infertile.

Examination shows right sided apical heart beats and CXR shows dextrocardia and bronchiectasis. Investigations revealed normal immunoglobulins, normal sweat sodium and negative skin prick tests for aspergillus.

What is the most likely diagnosis?

○ **Yellow nail syndrome**
● **Primary ciliary dyskinesia**
○ **Bronchiolitis**
○ **Situs inversus**
○ **Bronchiectasis**

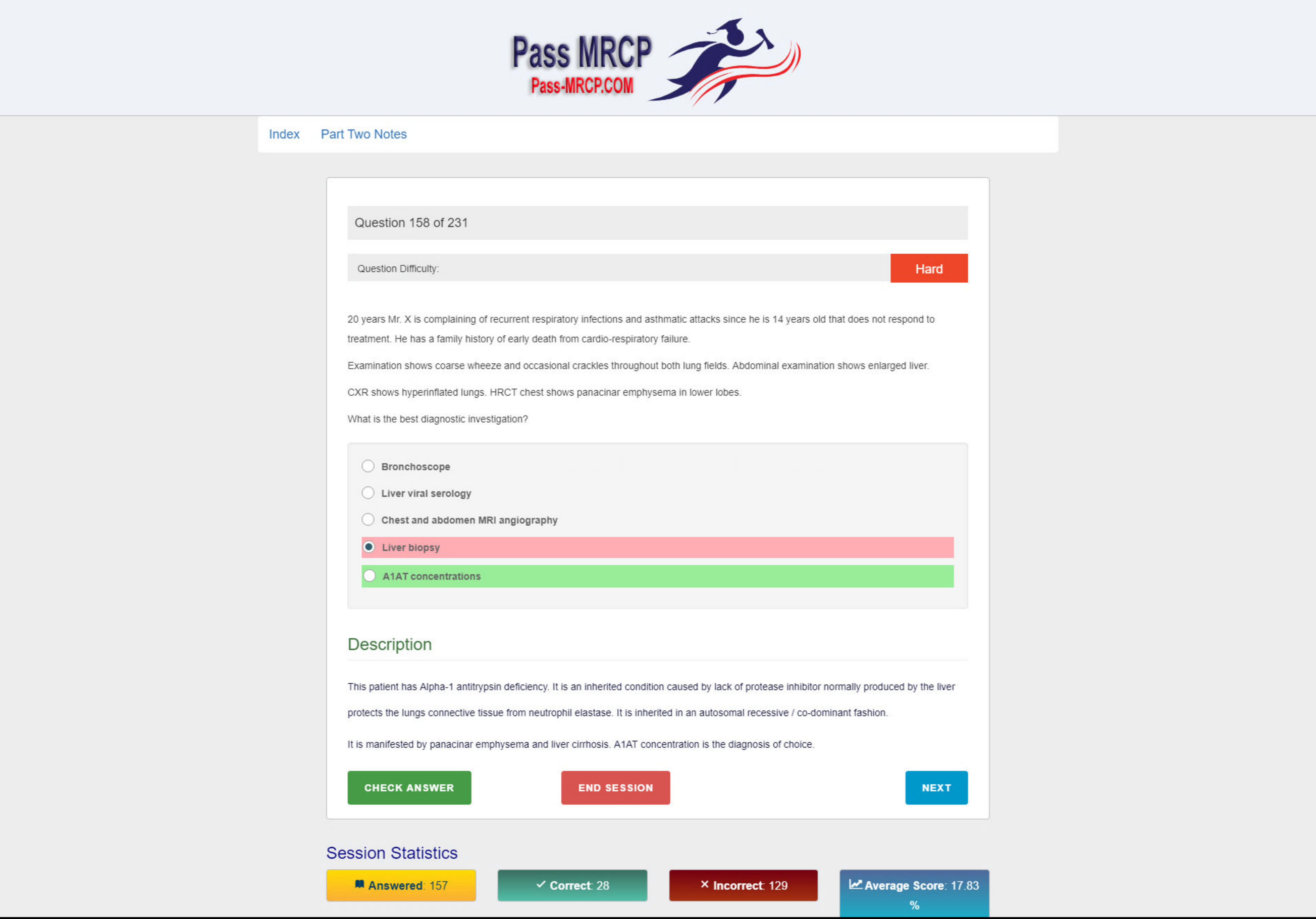
Description

Primary ciliary dyskinesia is an autosomal recessive genetic disorder that causes a defect in the action of the cilia lining the respiratory tract and fallopian tube, as well as the flagella of sperm cells. It is manifested by:

- Progressive bronchiectasis and sinusitis
- Immobility of sperm leads to male infertility (conception remains possible through the use of in vitro fertilization)
- Hearing loss and poor sense of smell
- Dextrocardia

Session Statistics

Answered: 156
✓ Correct: 27
✕ Incorrect: 129
Average Score: 17.31



Question 158 of 231

Question Difficulty: Hard

20 years Mr. X is complaining of recurrent respiratory infections and asthmatic attacks since he is 14 years old that does not respond to treatment. He has a family history of early death from cardio-respiratory failure.

Examination shows coarse wheeze and occasional crackles throughout both lung fields. Abdominal examination shows enlarged liver.

CXR shows hyperinflated lungs. HRCT chest shows panacinar emphysema in lower lobes.

What is the best diagnostic investigation?

- ○ **Bronchoscope**
- ○ **Liver viral serology**
- ○ **Chest and abdomen MRI angiography**
- ● **Liver biopsy**
- ○ **A1AT concentrations**

Description

This patient has Alpha-1 antitrypsin deficiency. It is an inherited condition caused by lack of protease inhibitor normally produced by the liver protects the lungs connective tissue from neutrophil elastase. It is inherited in an autosomal recessive / co-dominant fashion.

It is manifested by panacinar emphysema and liver cirrhosis. A1AT concentration is the diagnosis of choice.

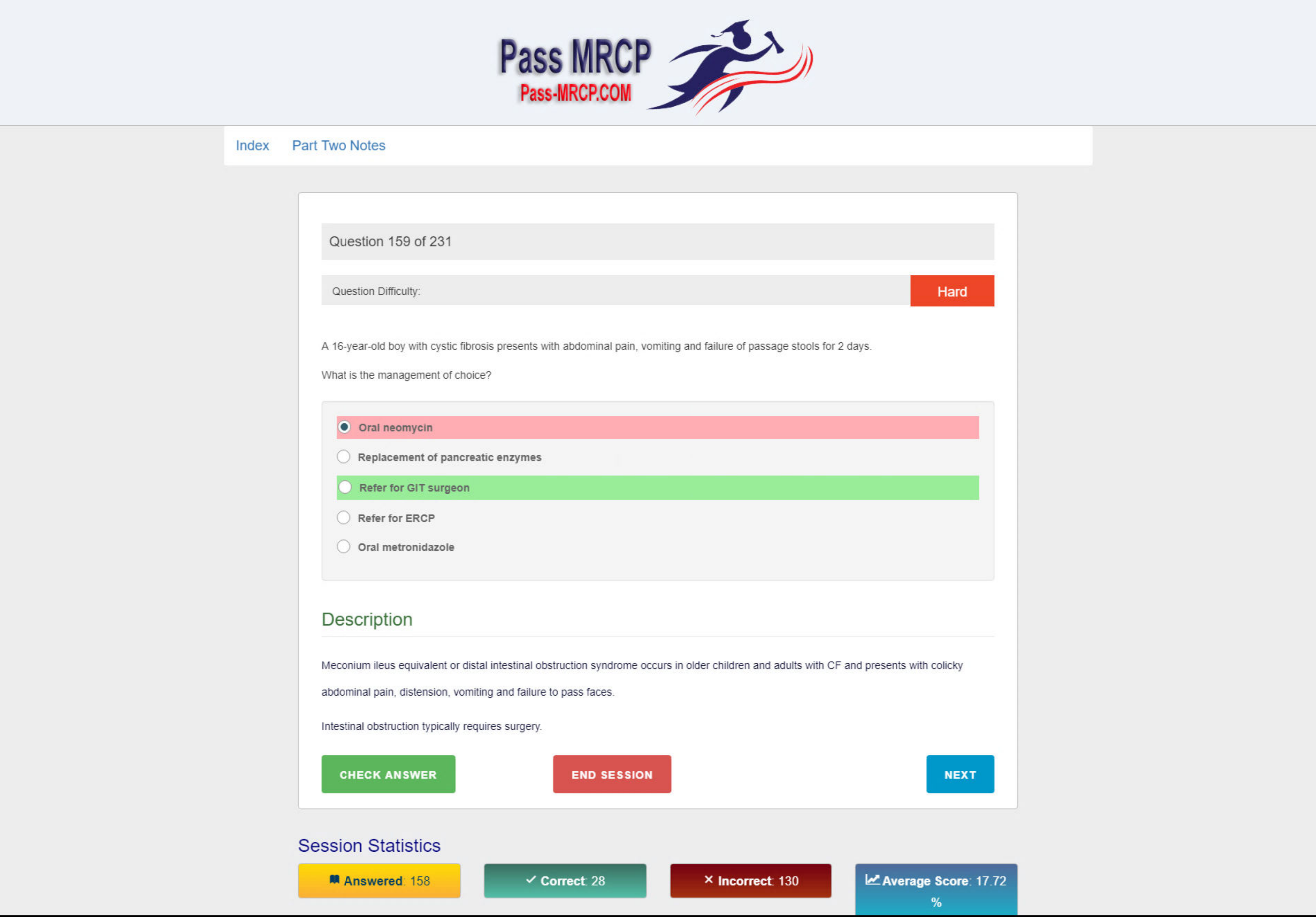
Session Statistics

Answered: 157

✓ **Correct**: 28

✕ **Incorrect**: 129

Average Score: 17.83 %


Pass MRCP
Pass-MRCP.COM
Index
Part Two Notes

Question 159 of 231

Question Difficulty: Hard

A 16-year-old boy with cystic fibrosis presents with abdominal pain, vomiting and failure of passage stools for 2 days.

What is the management of choice?

- ● Oral neomycin
- ○ Replacement of pancreatic enzymes
- ○ Refer for GIT surgeon
- ○ Refer for ERCP
- ○ Oral metronidazole

Description

Meconium ileus equivalent or distal intestinal obstruction syndrome occurs in older children and adults with CF and presents with colicky abdominal pain, distension, vomiting and failure to pass faces.

Intestinal obstruction typically requires surgery.

CHECK ANSWER
END SESSION
NEXT

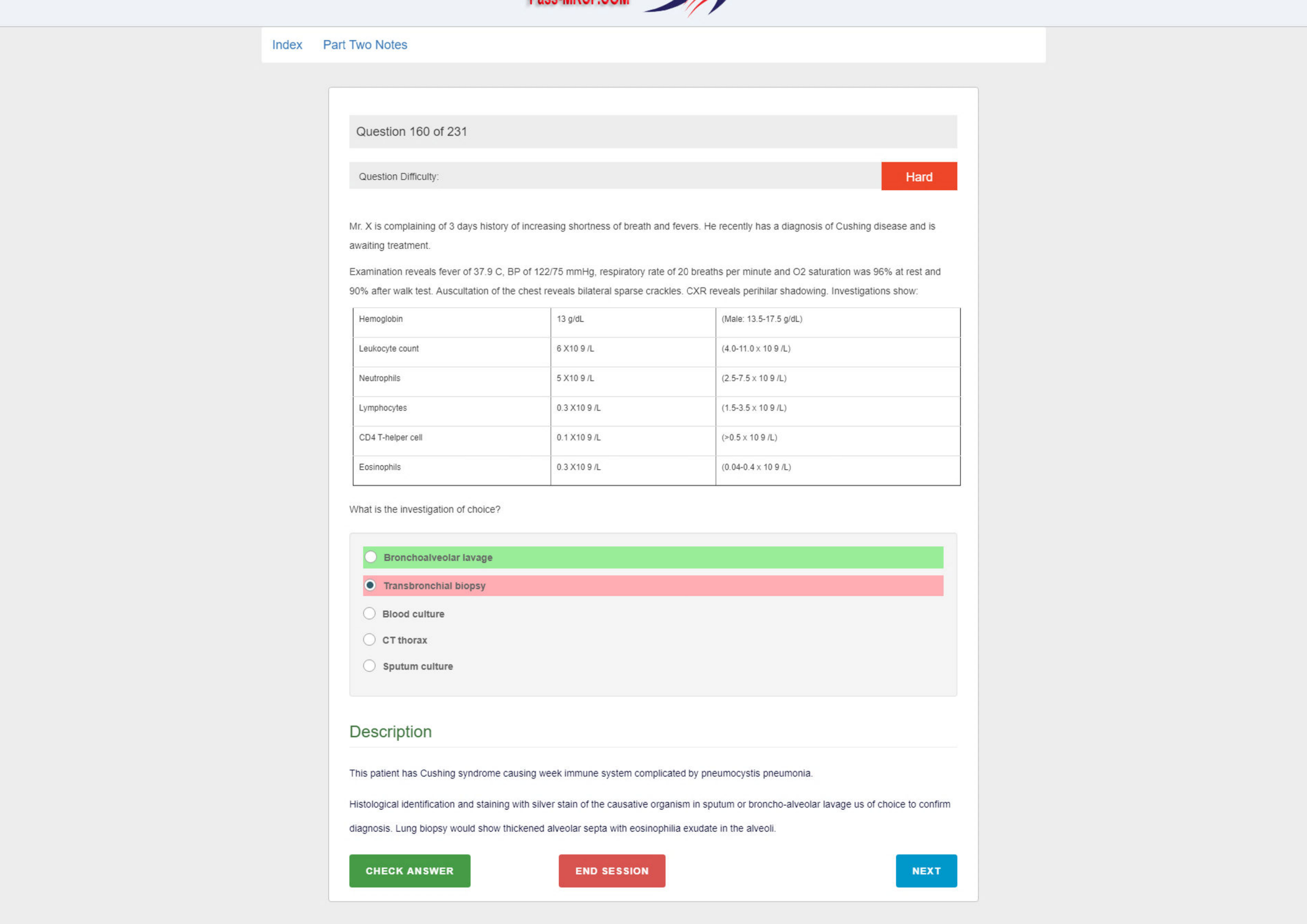
Session Statistics

Answered: 158

✓ Correct: 28

✕ Incorrect: 130

Average Score: 17.72 %



Question 160 of 231

Question Difficulty: **Hard**

Mr. X is complaining of 3 days history of increasing shortness of breath and fevers. He recently has a diagnosis of Cushing disease and is awaiting treatment.

Examination reveals fever of 37.9 C, BP of 122/75 mmHg, respiratory rate of 20 breaths per minute and O2 saturation was 96% at rest and 90% after walk test. Auscultation of the chest reveals bilateral sparse crackles. CXR reveals perihilar shadowing. Investigations show:

Hemoglobin	13 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Neutrophils	5 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.3 X10 9 /L	(1.5-3.5 x 10 9 /L)
CD4 T-helper cell	0.1 X10 9 /L	(>0.5 x 10 9 /L)
Eosinophils	0.3 X10 9 /L	(0.04-0.4 x 10 9 /L)

What is the investigation of choice?

- ○ **Bronchoalveolar lavage**
- ● **Transbronchial biopsy**
- ○ **Blood culture**
- ○ **CT thorax**
- ○ **Sputum culture**

Description

This patient has Cushing syndrome causing week immune system complicated by pneumocystis pneumonia.

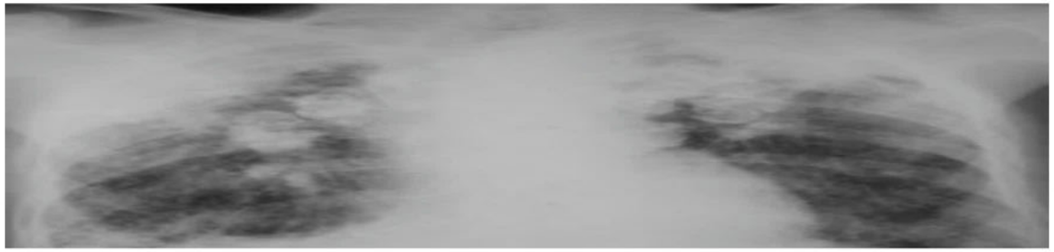
Histological identification and staining with silver stain of the causative organism in sputum or broncho-alveolar lavage us of choice to confirm diagnosis. Lung biopsy would show thickened alveolar septa with eosinophilia exudate in the alveoli.

Question 161 of 231

Question Difficulty: **Hard**

Mr. X is complaining of 2 year history of increasing breathlessness. He is a smoker with a 40 pack year history. He works ceramic factory.

His spirometry shows reduced FEV1 and FVC with elevated FEV1/FVC. CXR is shown in the image.



What is the most likely diagnosis?

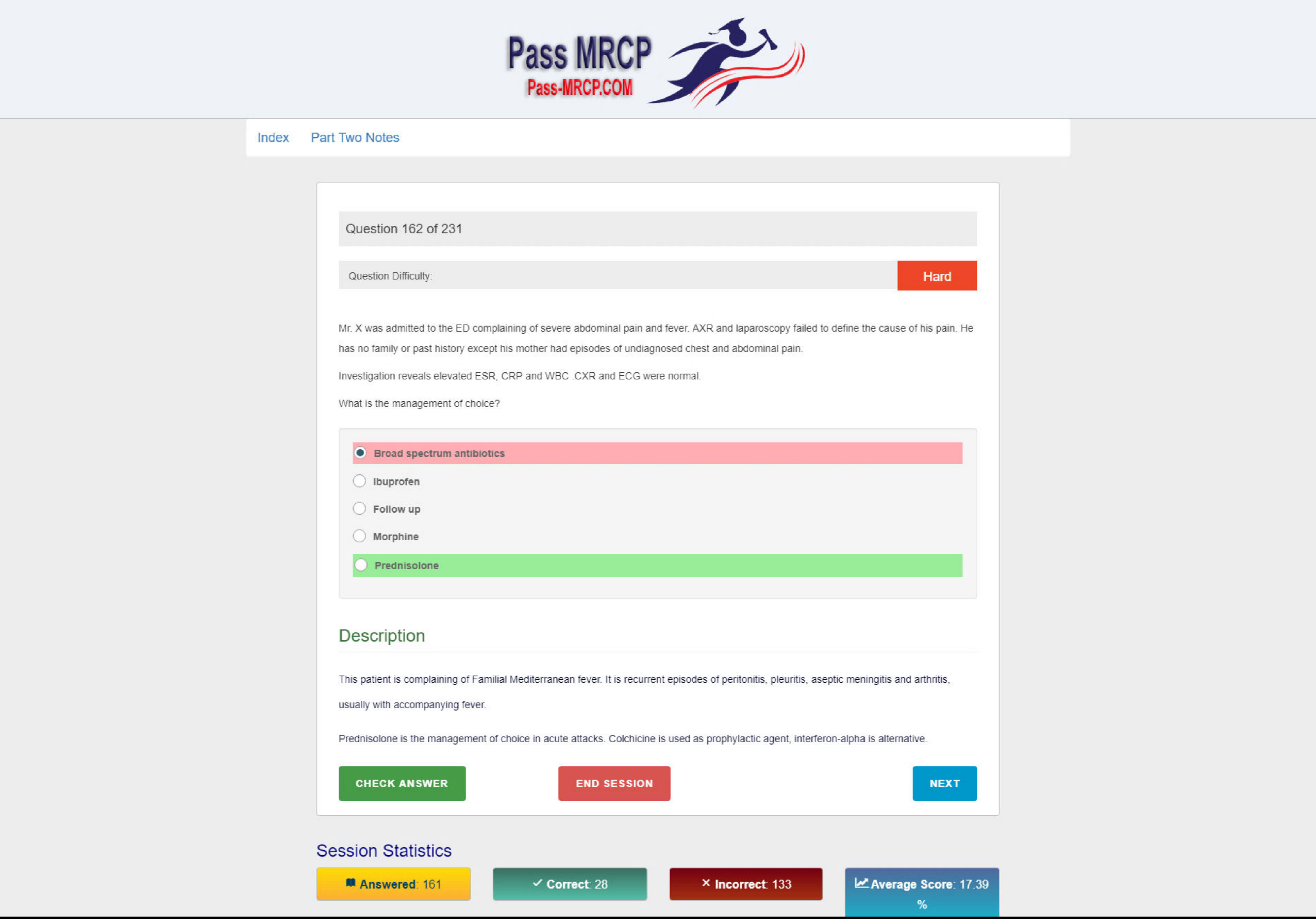
- ● **Simple pneumoconiosis**
- ○ **Byssinosis**
- ○ **Asbestosis**
- ○ **Berylliosis**
- ○ **Silicosis**

Description

Silicosis is a fibronodular lung disease caused by inhalation of dust containing crystalline silica. It is a risk factor for developing TB as silica dust is toxic to macrophages.

CXR shows multiple small nodules prominent in the upper lung field with upper zone fibrosis and hilar lymphadenopathy with ‘eggshell’ calcification (pathognomonic). Coalescence of nodules leads to progressive massive fibrosis (PMF) development. Pulmonary function testing shows restrictive pattern.

CHECK ANSWER END SESSION NEXT



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Question 162 of 231

Question Difficulty: Hard

Mr. X was admitted to the ED complaining of severe abdominal pain and fever. AXR and laparoscopy failed to define the cause of his pain. He has no family or past history except his mother had episodes of undiagnosed chest and abdominal pain.

Investigation reveals elevated ESR, CRP and WBC .CXR and ECG were normal.

What is the management of choice?

- ● Broad spectrum antibiotics
- ○ Ibuprofen
- ○ Follow up
- ○ Morphine
- ○ Prednisolone

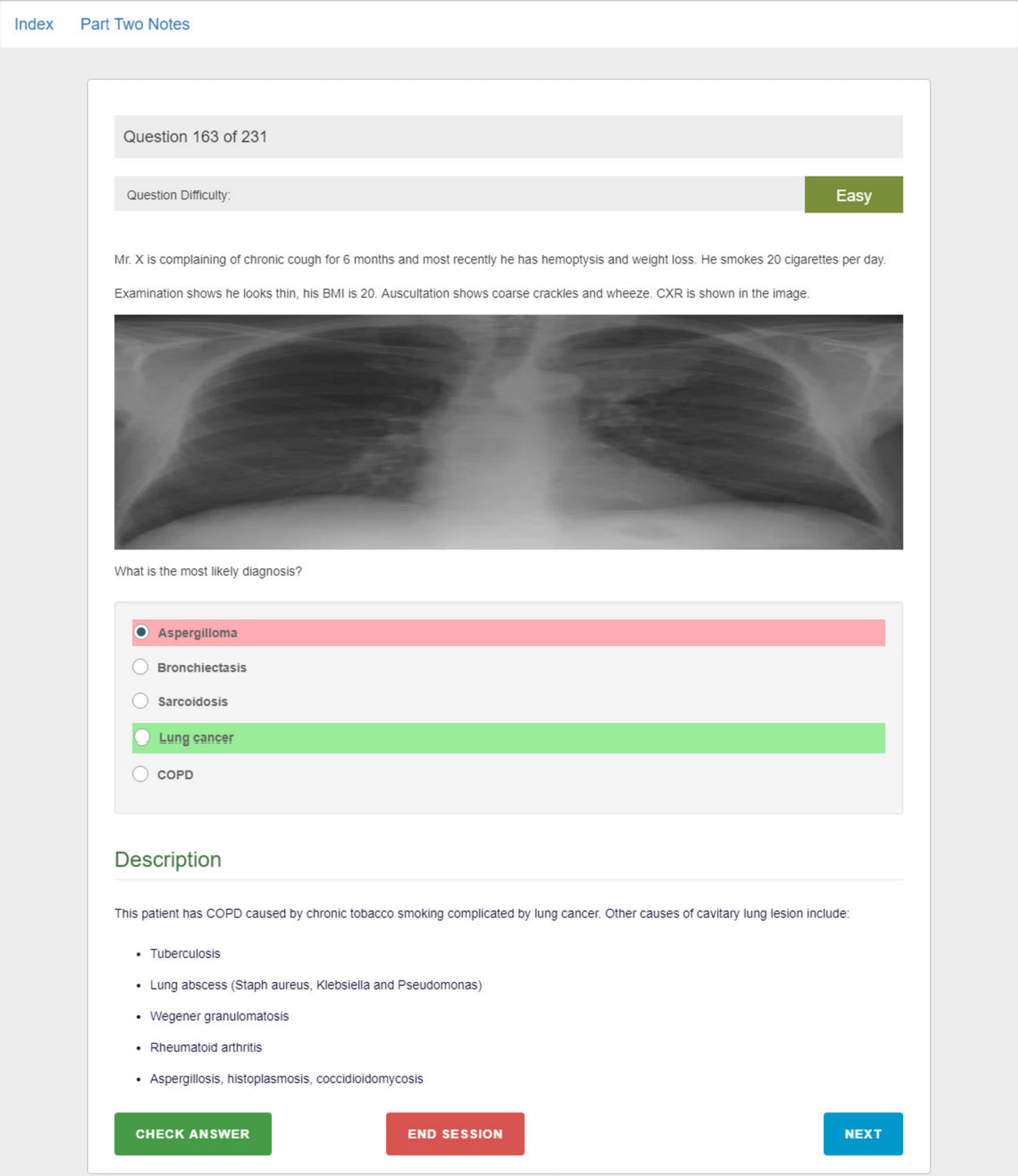
Description

This patient is complaining of Familial Mediterranean fever. It is recurrent episodes of peritonitis, pleuritis, aseptic meningitis and arthritis, usually with accompanying fever.

Prednisolone is the management of choice in acute attacks. Colchicine is used as prophylactic agent, interferon-alpha is alternative.

Session Statistics

Answered: 161
✓ **Correct**: 28
× **Incorrect**: 133
Average Score: 17.39 %



Question 163 of 231

Question Difficulty: Easy

Mr. X is complaining of chronic cough for 6 months and most recently he has hemoptysis and weight loss. He smokes 20 cigarettes per day.

Examination shows he looks thin, his BMI is 20. Auscultation shows coarse crackles and wheeze. CXR is shown in the image.

What is the most likely diagnosis?

● Aspergilloma

○ Bronchiectasis

○ Sarcoidosis

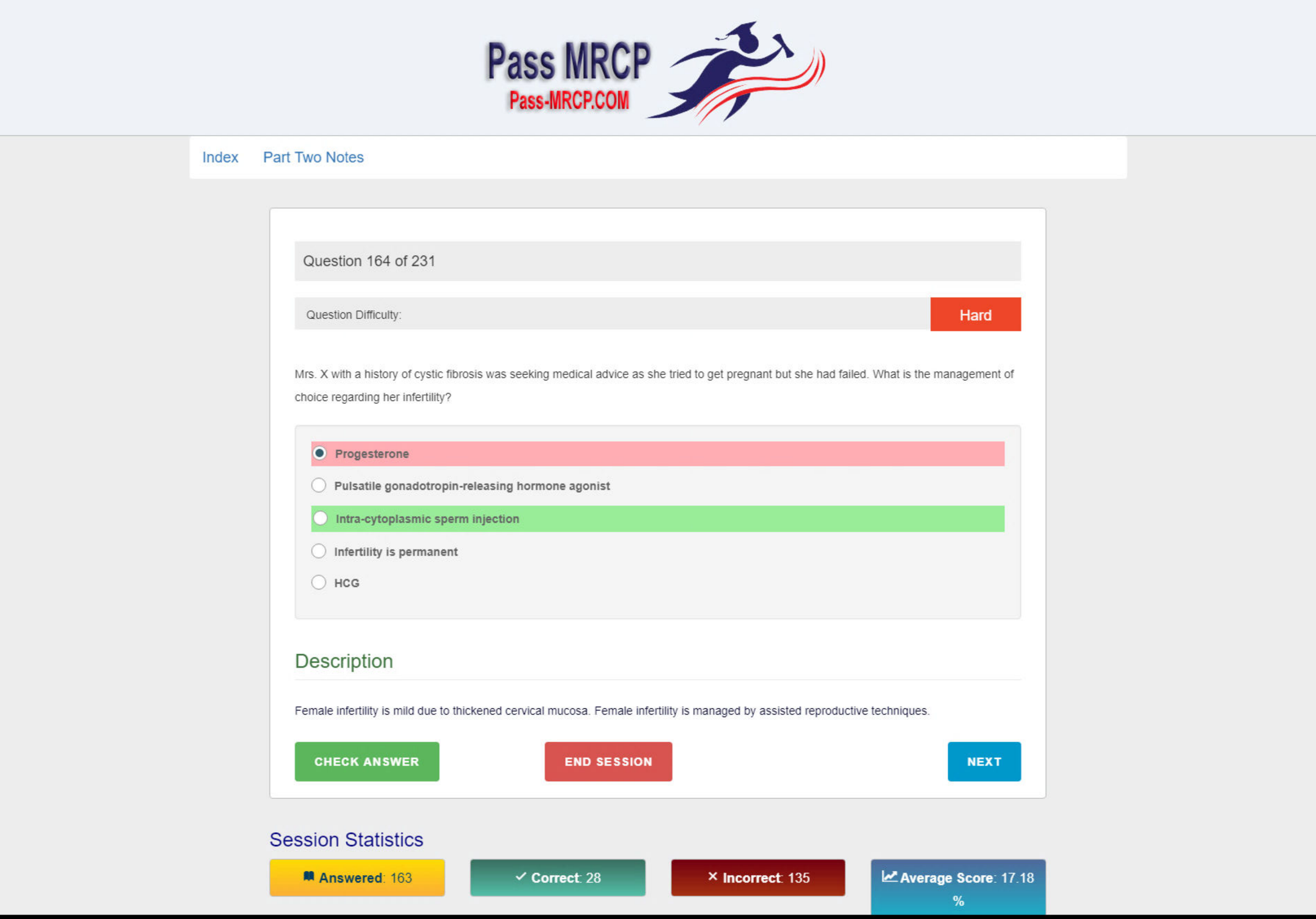
○ Lung cancer

○ COPD

Description

This patient has COPD caused by chronic tobacco smoking complicated by lung cancer. Other causes of cavitary lung lesion include:

- Tuberculosis
- Lung abscess (Staph aureus, Klebsiella and Pseudomonas)
- Wegener granulomatosis
- Rheumatoid arthritis
- Aspergillosis, histoplasmosis, coccidioidomycosis



Pass MRCP
Pass-MRCP.COM
Index
Part Two Notes

Question 164 of 231

Question Difficulty: **Hard**

Mrs. X with a history of cystic fibrosis was seeking medical advice as she tried to get pregnant but she had failed. What is the management of choice regarding her infertility?

- ● **Progesterone**
- ○ **Pulsatile gonadotropin-releasing hormone agonist**
- ○ **Intra-cytoplasmic sperm injection**
- ○ **Infertility is permanent**
- ○ **HCG**

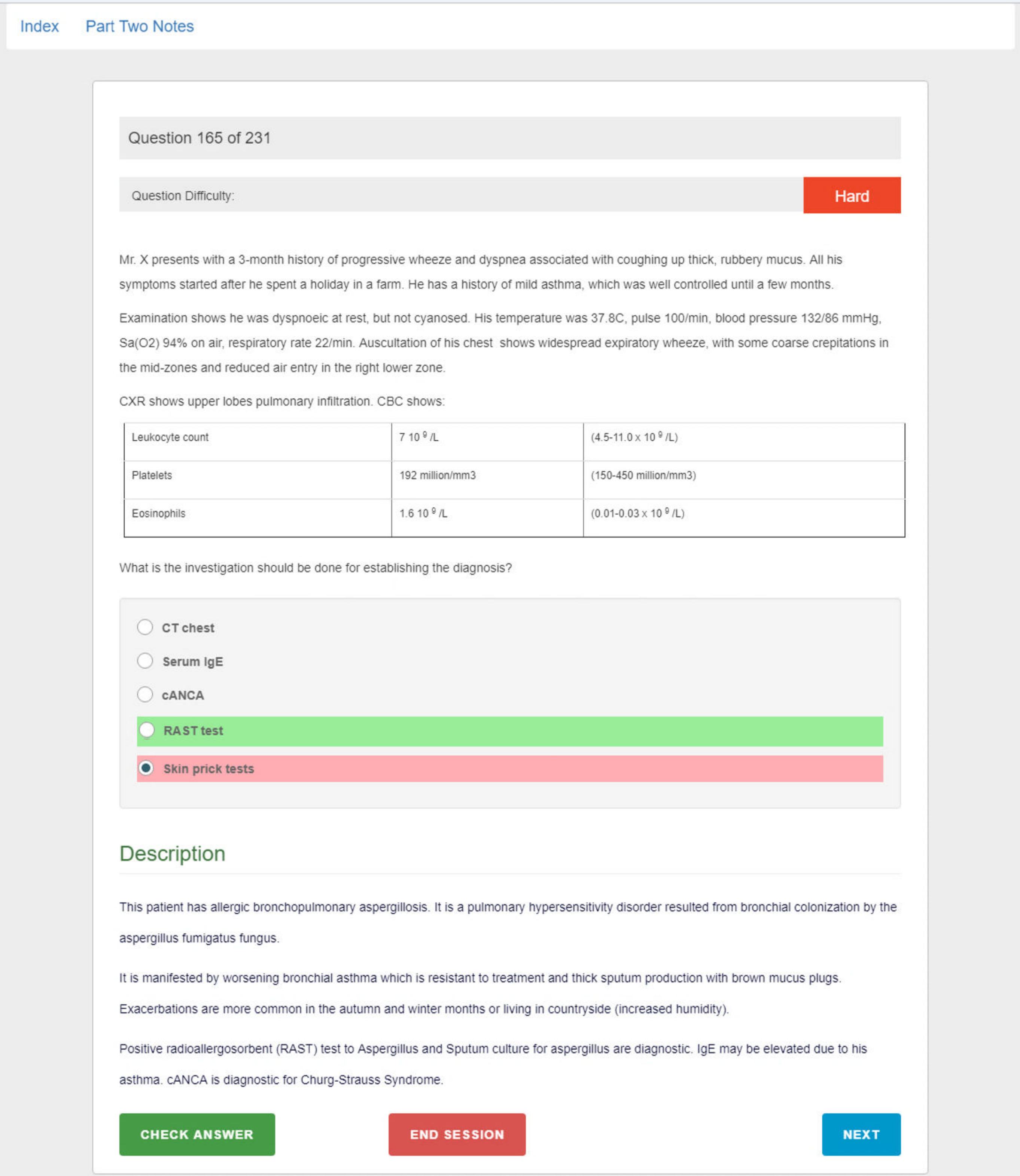
Description

Female infertility is mild due to thickened cervical mucosa. Female infertility is managed by assisted reproductive techniques.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 163
✓ **Correct**: 28
× **Incorrect**: 135
Average Score: 17.18 %



Question 165 of 231

Question Difficulty: **Hard**

Mr. X presents with a 3-month history of progressive wheeze and dyspnea associated with coughing up thick, rubbery mucus. All his symptoms started after he spent a holiday in a farm. He has a history of mild asthma, which was well controlled until a few months.

Examination shows he was dyspnoeic at rest, but not cyanosed. His temperature was 37.8C, pulse 100/min, blood pressure 132/86 mmHg, Sa(O2) 94% on air, respiratory rate 22/min. Auscultation of his chest shows widespread expiratory wheeze, with some coarse crepitations in the mid-zones and reduced air entry in the right lower zone.

CXR shows upper lobes pulmonary infiltration. CBC shows:

Leukocyte count	7 10^9 /L	(4.5-11.0 x 10^9 /L)
Platelets	192 million/mm3	(150-450 million/mm3)
Eosinophils	1.6 10^9 /L	(0.01-0.03 x 10^9 /L)

What is the investigation should be done for establishing the diagnosis?

- ○ **CT chest**
- ○ **Serum IgE**
- ○ **cANCA**
- ○ **RAST test**
- ● **Skin prick tests**

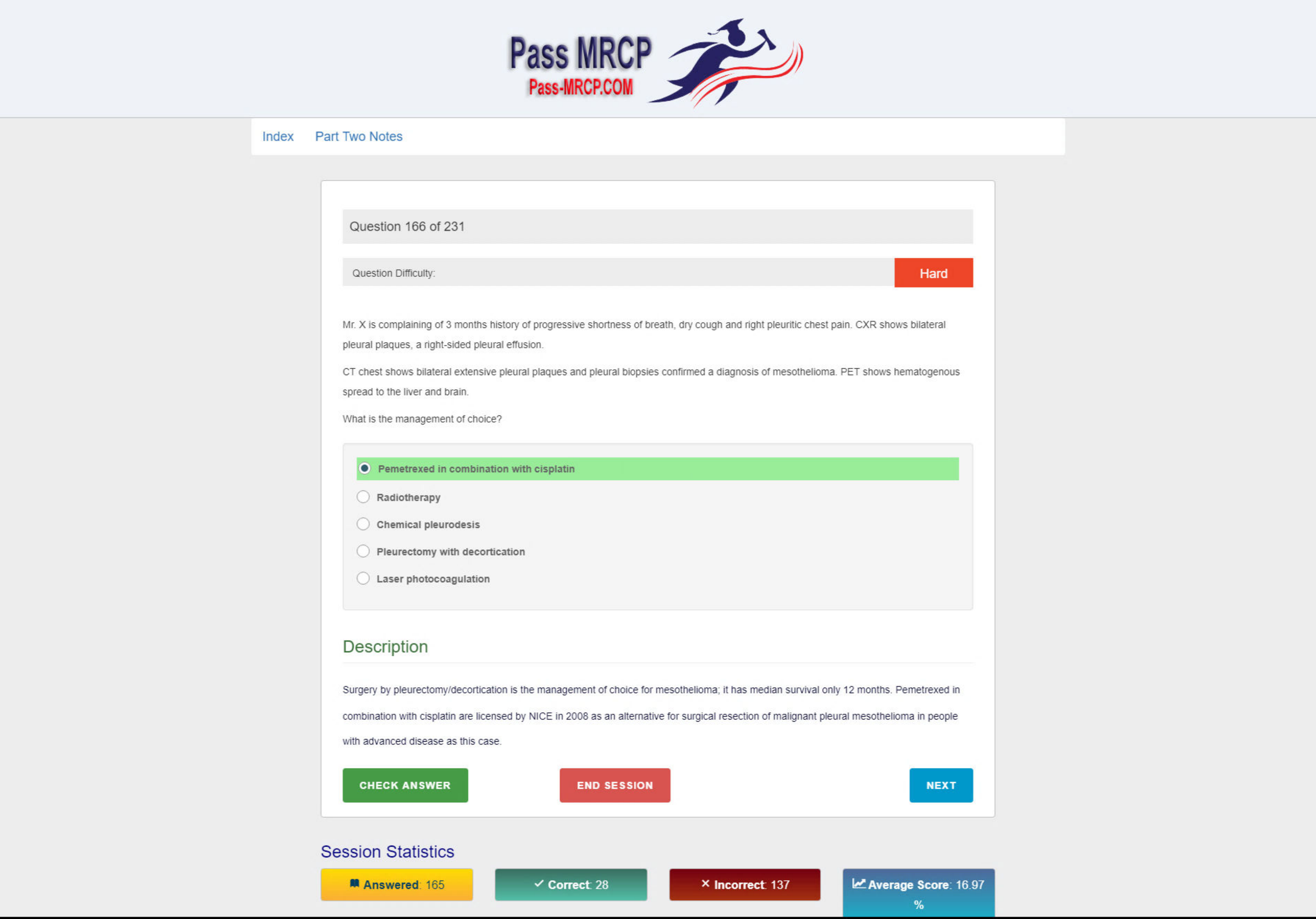
Description

This patient has allergic bronchopulmonary aspergillosis. It is a pulmonary hypersensitivity disorder resulted from bronchial colonization by the aspergillus fumigatus fungus.

It is manifested by worsening bronchial asthma which is resistant to treatment and thick sputum production with brown mucus plugs.

Exacerbations are more common in the autumn and winter months or living in countryside (increased humidity).

Positive radioallergosorbent (RAST) test to Aspergillus and Sputum culture for aspergillus are diagnostic. IgE may be elevated due to his asthma. cANCA is diagnostic for Churg-Strauss Syndrome.



Question 166 of 231

Question Difficulty: Hard

Mr. X is complaining of 3 months history of progressive shortness of breath, dry cough and right pleuritic chest pain. CXR shows bilateral pleural plaques, a right-sided pleural effusion.

CT chest shows bilateral extensive pleural plaques and pleural biopsies confirmed a diagnosis of mesothelioma. PET shows hematogenous spread to the liver and brain.

What is the management of choice?

- ● **Pemetrexed in combination with cisplatin**
- ○ **Radiotherapy**
- ○ **Chemical pleurodesis**
- ○ **Pleurectomy with decortication**
- ○ **Laser photocoagulation**

Description

Surgery by pleurectomy/decortication is the management of choice for mesothelioma; it has median survival only 12 months. Pemetrexed in combination with cisplatin are licensed by NICE in 2008 as an alternative for surgical resection of malignant pleural mesothelioma in people with advanced disease as this case.

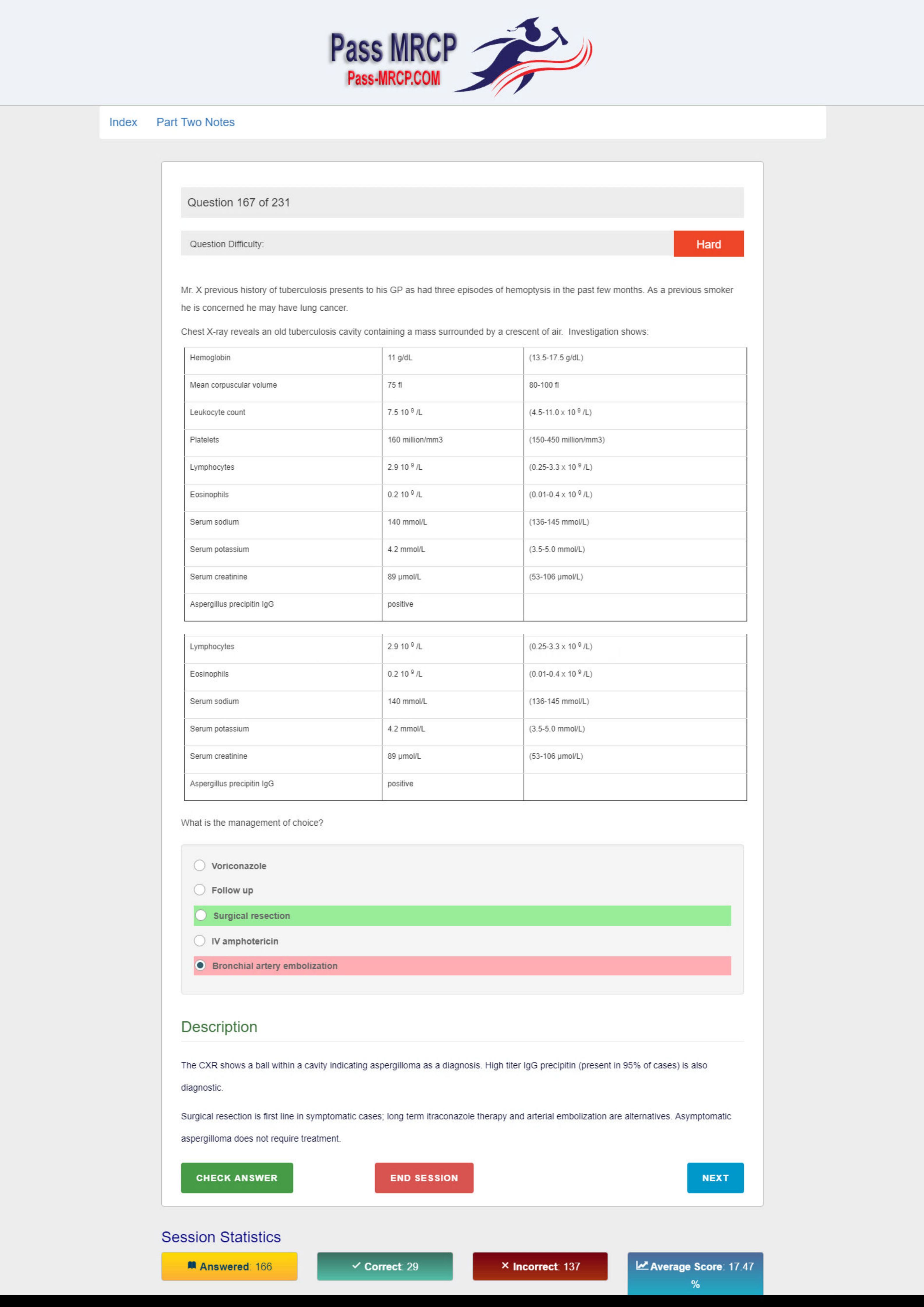
Session Statistics

Answered: 165

✓ **Correct**: 28

× **Incorrect**: 137

Average Score: 16.97 %



Question 167 of 231

Question Difficulty: **Hard**

Mr. X previous history of tuberculosis presents to his GP as had three episodes of hemoptysis in the past few months. As a previous smoker he is concerned he may have lung cancer.

Chest X-ray reveals an old tuberculosis cavity containing a mass surrounded by a crescent of air. Investigation shows:

Hemoglobin	11 g/dL	(13.5-17.5 g/dL)
Mean corpuscular volume	75 fl	80-100 fl
Leukocyte count	7.5 10^9/L	(4.5-11.0 x 10^9/L)
Platelets	160 million/mm3	(150-450 million/mm3)
Lymphocytes	2.9 10^9/L	(0.25-3.3 x 10^9/L)
Eosinophils	0.2 10^9/L	(0.01-0.4 x 10^9/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	89 µmol/L	(53-106 µmol/L)
Aspergillus precipitin IgG	positive	

Lymphocytes	2.9 10^9/L	(0.25-3.3 x 10^9/L)
Eosinophils	0.2 10^9/L	(0.01-0.4 x 10^9/L)
Serum sodium	140 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
Serum creatinine	89 µmol/L	(53-106 µmol/L)
Aspergillus precipitin IgG	positive	

What is the management of choice?

○ **Voriconazole**
○ **Follow up**
○ **Surgical resection**
○ **IV amphotericin**
● **Bronchial artery embolization**

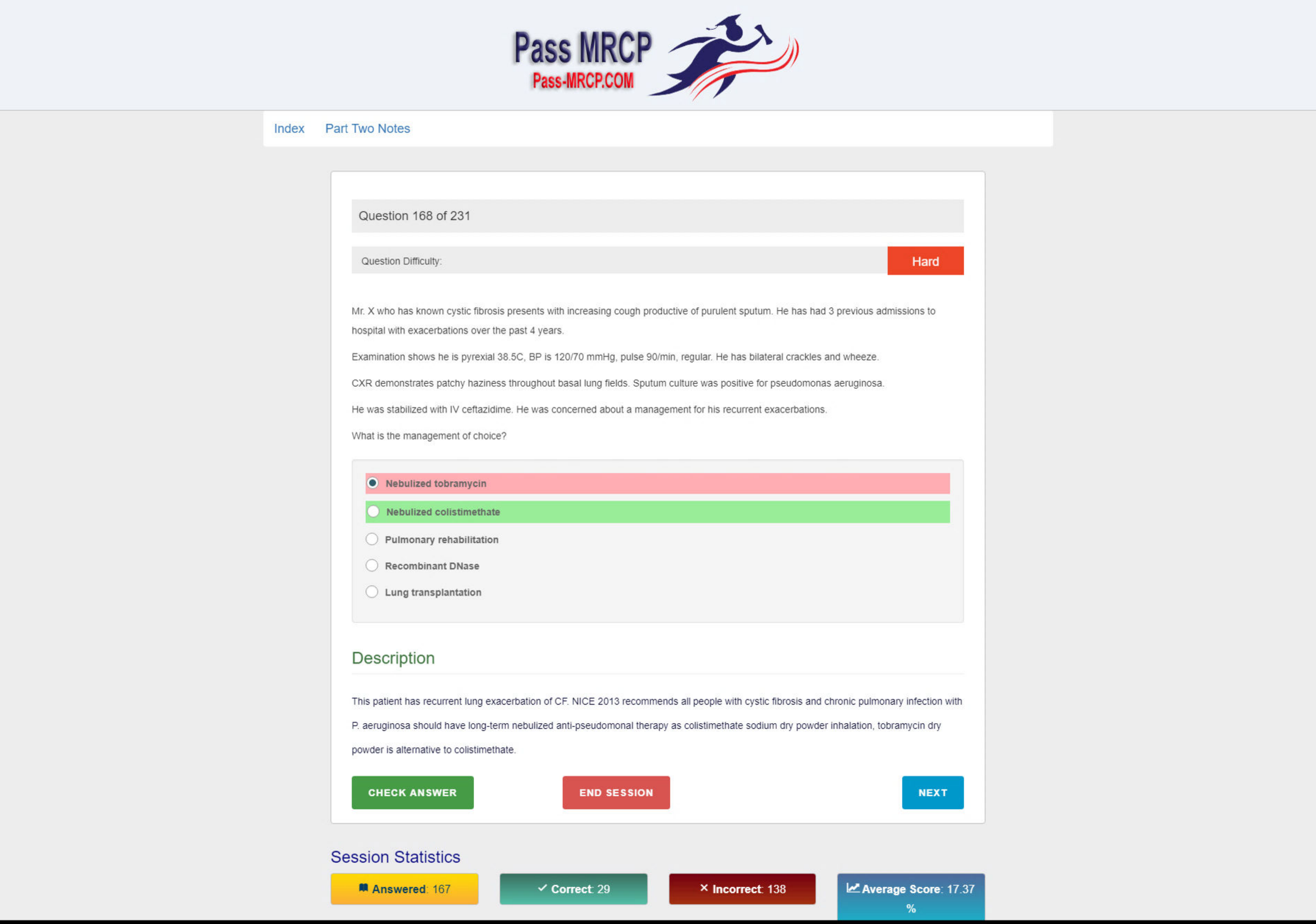
Description

The CXR shows a ball within a cavity indicating aspergilloma as a diagnosis. High titer IgG precipitin (present in 95% of cases) is also diagnostic.

Surgical resection is first line in symptomatic cases; long term itraconazole therapy and arterial embolization are alternatives. Asymptomatic aspergilloma does not require treatment.

Session Statistics

Answered: 166
✓ Correct: 29
✕ Incorrect: 137
Average Score: 17.47 %



Question 168 of 231

Question Difficulty: **Hard**

Mr. X who has known cystic fibrosis presents with increasing cough productive of purulent sputum. He has had 3 previous admissions to hospital with exacerbations over the past 4 years.

Examination shows he is pyrexial 38.5C, BP is 120/70 mmHg, pulse 90/min, regular. He has bilateral crackles and wheeze.

CXR demonstrates patchy haziness throughout basal lung fields. Sputum culture was positive for pseudomonas aeruginosa.

He was stabilized with IV ceftazidime. He was concerned about a management for his recurrent exacerbations.

What is the management of choice?

- ● **Nebulized tobramycin**
- ○ **Nebulized colistimethate**
- ○ **Pulmonary rehabilitation**
- ○ **Recombinant DNase**
- ○ **Lung transplantation**

Description

This patient has recurrent lung exacerbation of CF. NICE 2013 recommends all people with cystic fibrosis and chronic pulmonary infection with P. aeruginosa should have long-term nebulized anti-pseudomonal therapy as colistimethate sodium dry powder inhalation, tobramycin dry powder is alternative to colistimethate.

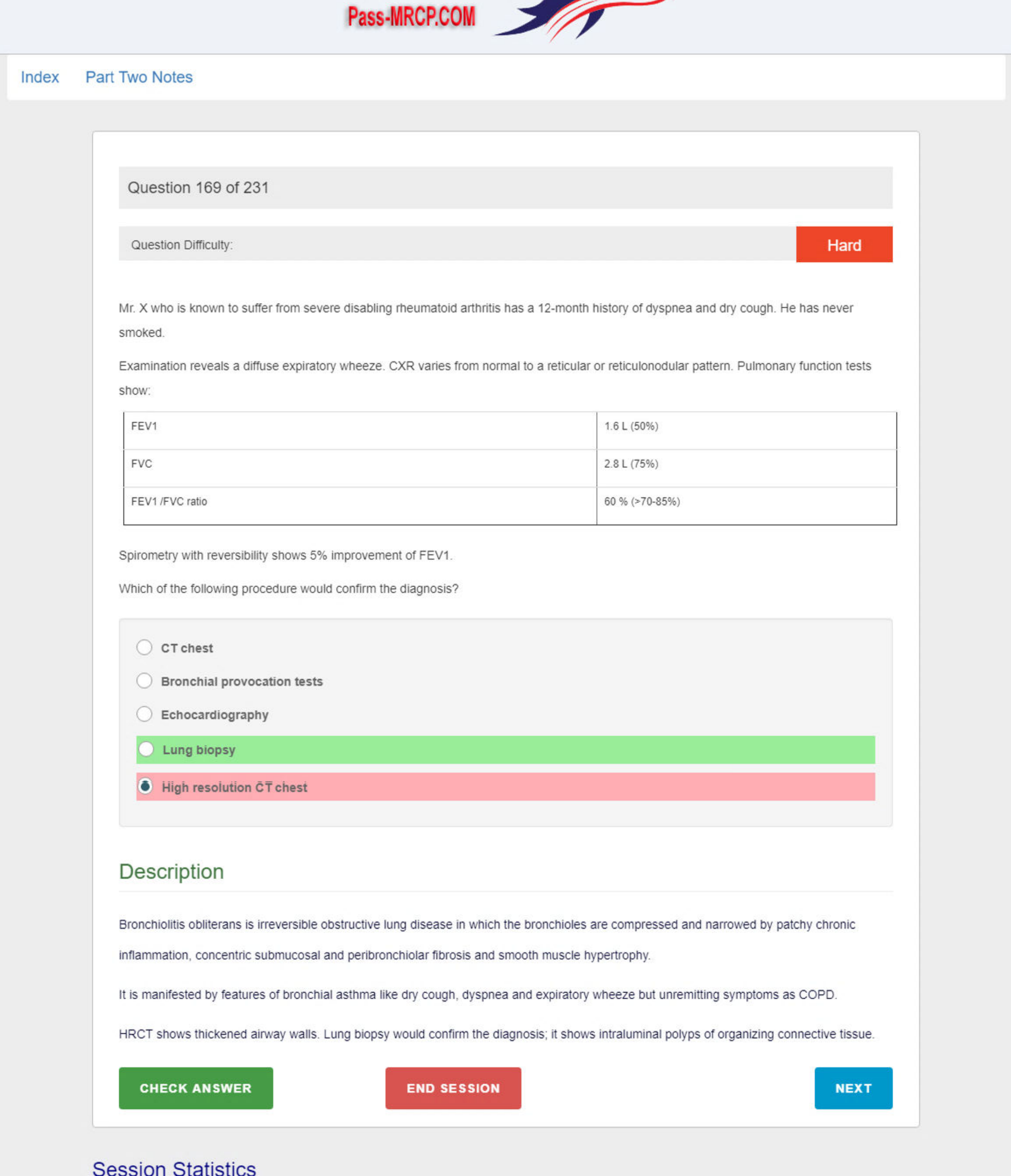
Session Statistics

Answered: 167

Correct: 29

Incorrect: 138

Average Score: 17.37 %



Question 169 of 231

Question Difficulty: **Hard**

Mr. X who is known to suffer from severe disabling rheumatoid arthritis has a 12-month history of dyspnea and dry cough. He has never smoked.

Examination reveals a diffuse expiratory wheeze. CXR varies from normal to a reticular or reticulonodular pattern. Pulmonary function tests show:

FEV1	1.6 L (50%)
FVC	2.8 L (75%)
FEV1 /FVC ratio	60 % (>70-85%)

Spirometry with reversibility shows 5% improvement of FEV1.

Which of the following procedure would confirm the diagnosis?

- ○ **CT chest**
- ○ **Bronchial provocation tests**
- ○ **Echocardiography**
- ○ **Lung biopsy**
- ● **High resolution CT chest**

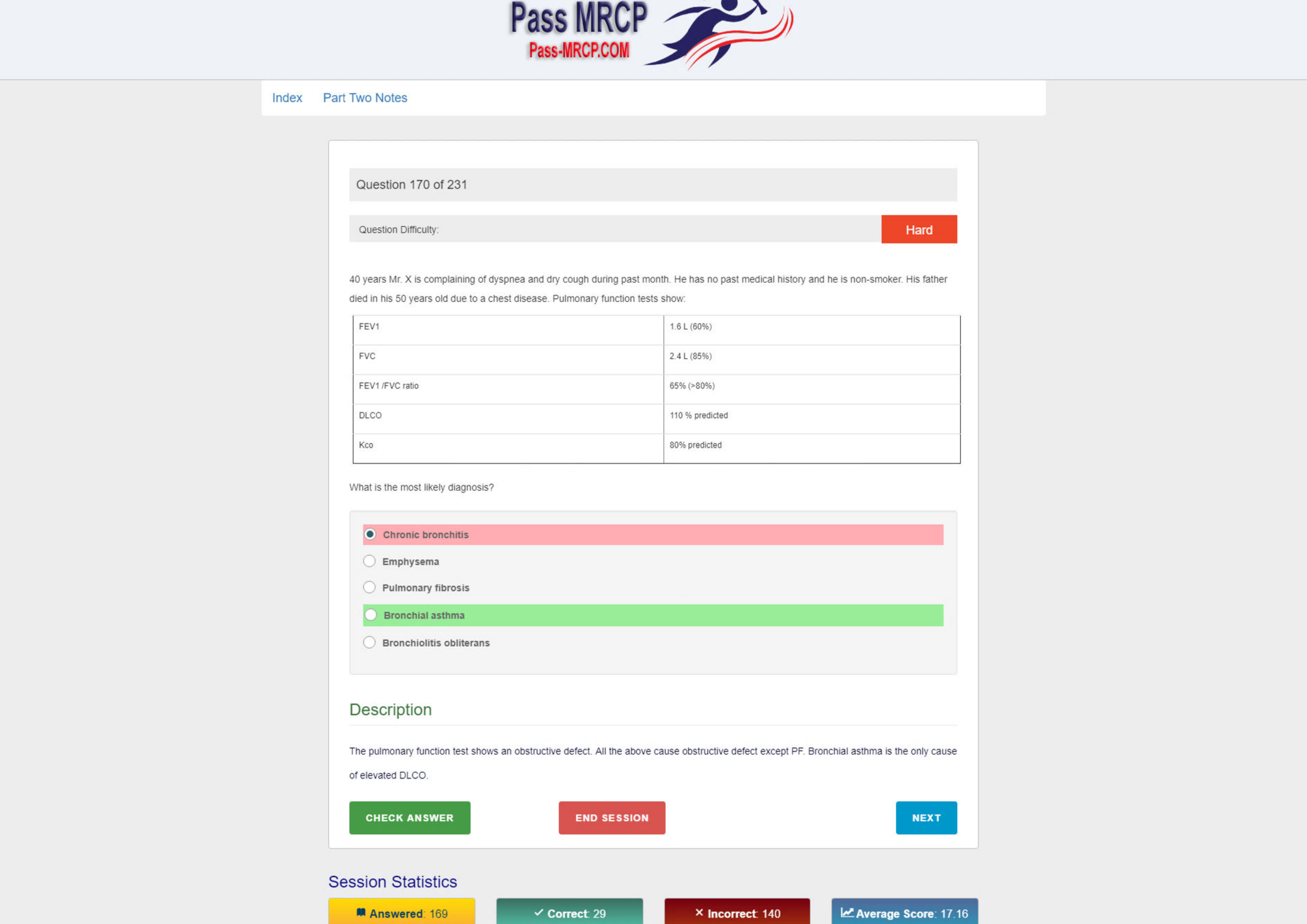
Description

Bronchiolitis obliterans is irreversible obstructive lung disease in which the bronchioles are compressed and narrowed by patchy chronic inflammation, concentric submucosal and peribronchiolar fibrosis and smooth muscle hypertrophy.

It is manifested by features of bronchial asthma like dry cough, dyspnea and expiratory wheeze but unremitting symptoms as COPD.

HRCT shows thickened airway walls. Lung biopsy would confirm the diagnosis; it shows intraluminal polyps of organizing connective tissue.

Session Statistics


Pass MRCP
Pass-MRCP.COM
Index
Part Two Notes

Question 170 of 231

Question Difficulty: **Hard**

40 years Mr. X is complaining of dyspnea and dry cough during past month. He has no past medical history and he is non-smoker. His father died in his 50 years old due to a chest disease. Pulmonary function tests show:

FEV1	1.6 L (60%)
FVC	2.4 L (85%)
FEV1 /FVC ratio	65% (>80%)
DLCO	110 % predicted
Kco	80% predicted

What is the most likely diagnosis?

- ● **Chronic bronchitis**
- ○ **Emphysema**
- ○ **Pulmonary fibrosis**
- ○ **Bronchial asthma**
- ○ **Bronchiolitis obliterans**

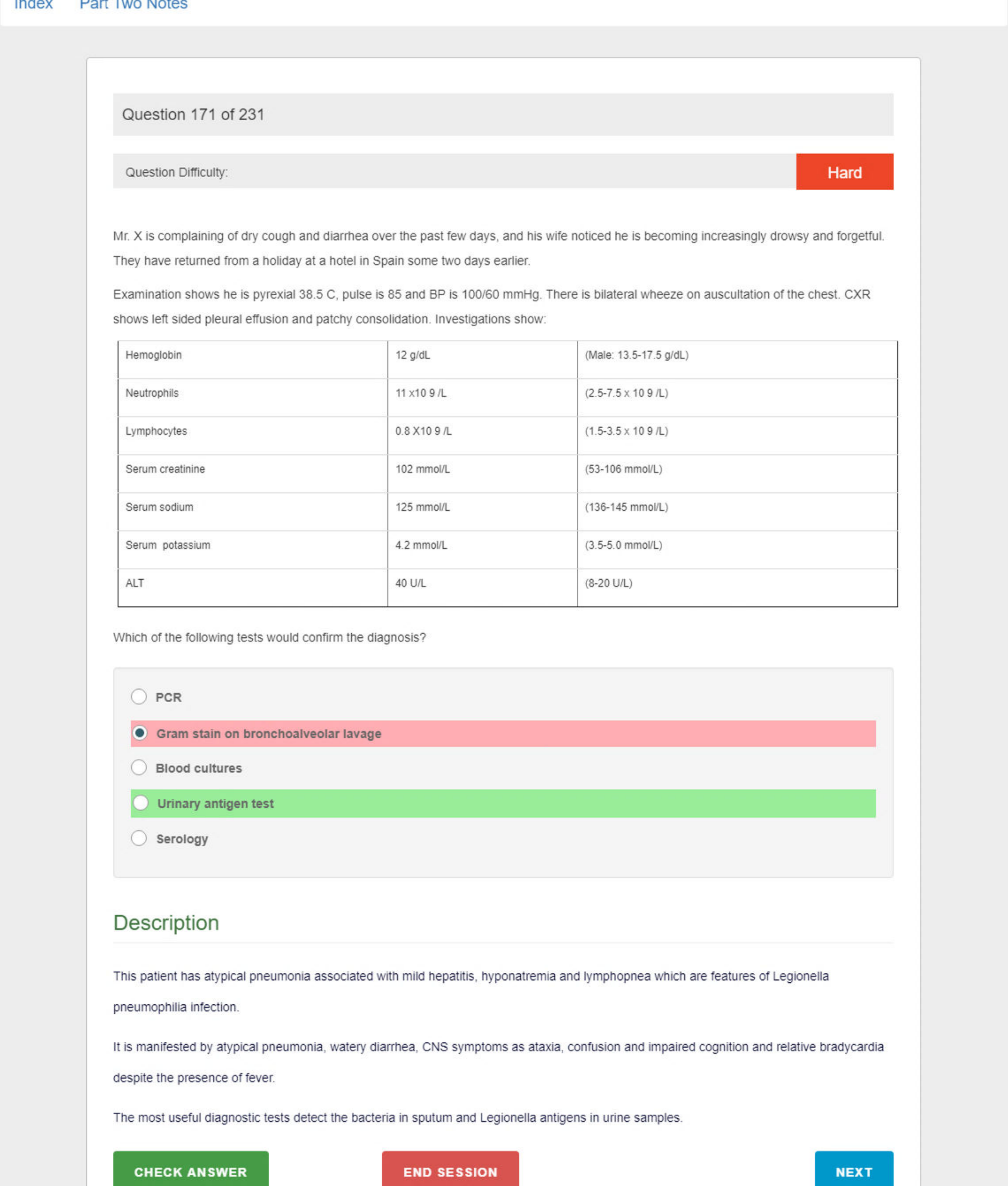
Description

The pulmonary function test shows an obstructive defect. All the above cause obstructive defect except PF. Bronchial asthma is the only cause of elevated DLCO.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 169
✓ Correct: 29
× Incorrect: 140
Average Score: 17.16



Question 171 of 231

Question Difficulty: Hard

Mr. X is complaining of dry cough and diarrhea over the past few days, and his wife noticed he is becoming increasingly drowsy and forgetful. They have returned from a holiday at a hotel in Spain some two days earlier.

Examination shows he is pyrexial 38.5 C, pulse is 85 and BP is 100/60 mmHg. There is bilateral wheeze on auscultation of the chest. CXR shows left sided pleural effusion and patchy consolidation. Investigations show:

Hemoglobin	12 g/dL	(Male: 13.5-17.5 g/dL)
Neutrophils	11 x10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.8 X10 9 /L	(1.5-3.5 x 10 9 /L)
Serum creatinine	102 mmol/L	(53-106 mmol/L)
Serum sodium	125 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
ALT	40 U/L	(8-20 U/L)

Which of the following tests would confirm the diagnosis?

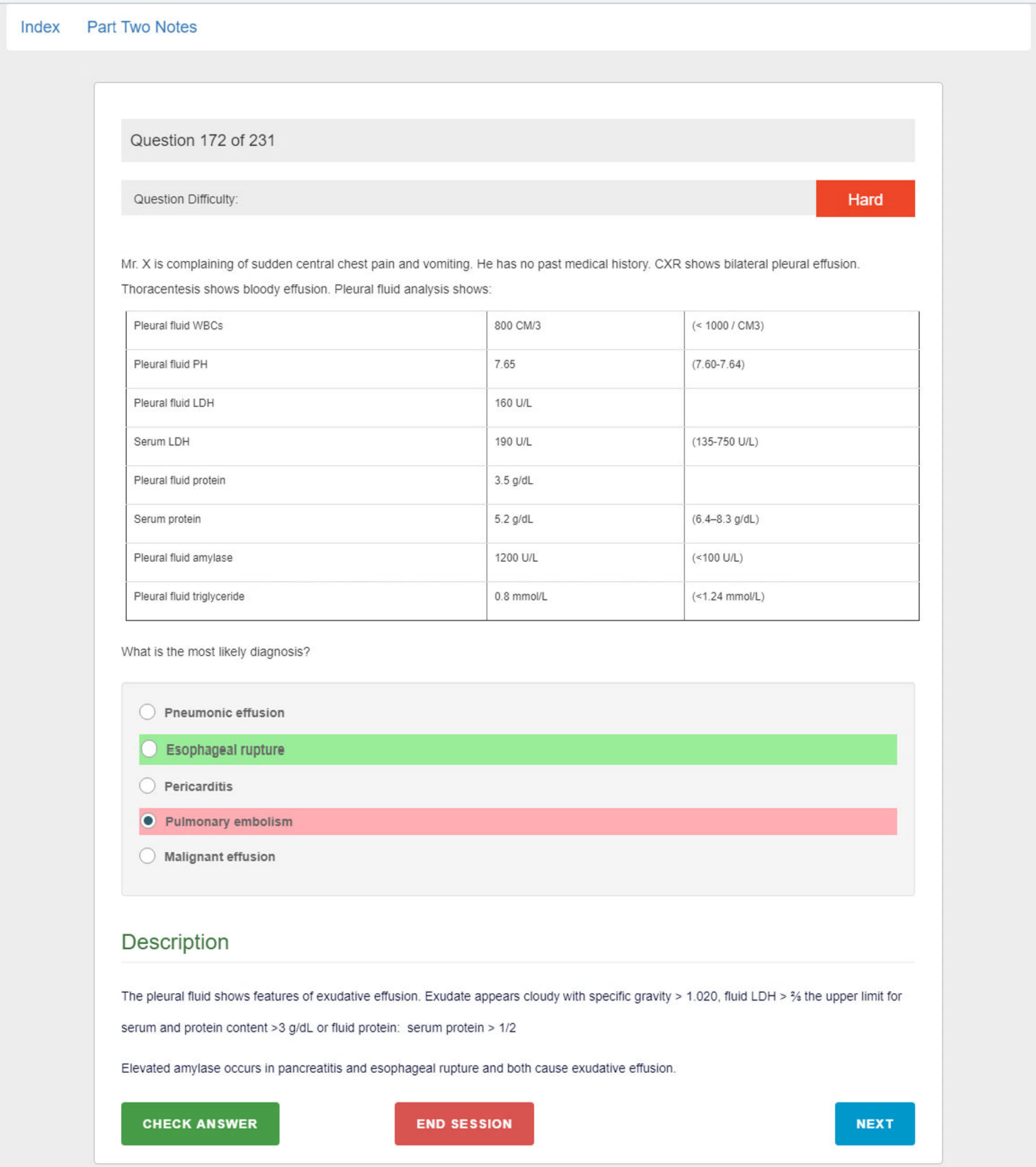
- ○ **PCR**
- ● **Gram stain on bronchoalveolar lavage**
- ○ **Blood cultures**
- ○ **Urinary antigen test**
- ○ **Serology**

Description

This patient has atypical pneumonia associated with mild hepatitis, hyponatremia and lymphopnea which are features of Legionella pneumophilia infection.

It is manifested by atypical pneumonia, watery diarrhea, CNS symptoms as ataxia, confusion and impaired cognition and relative bradycardia despite the presence of fever.

The most useful diagnostic tests detect the bacteria in sputum and Legionella antigens in urine samples.



Question 172 of 231

Mr. X is complaining of sudden central chest pain and vomiting. He has no past medical history. CXR shows bilateral pleural effusion. Thoracentesis shows bloody effusion. Pleural fluid analysis shows:

Pleural fluid WBCs	800 CM/3	(< 1000 / CM3)
Pleural fluid PH	7.65	(7.60-7.64)
Pleural fluid LDH	160 U/L	
Serum LDH	190 U/L	(135-750 U/L)
Pleural fluid protein	3.5 g/dL	
Serum protein	5.2 g/dL	(6.4–8.3 g/dL)
Pleural fluid amylase	1200 U/L	(<100 U/L)
Pleural fluid triglyceride	0.8 mmol/L	(<1.24 mmol/L)

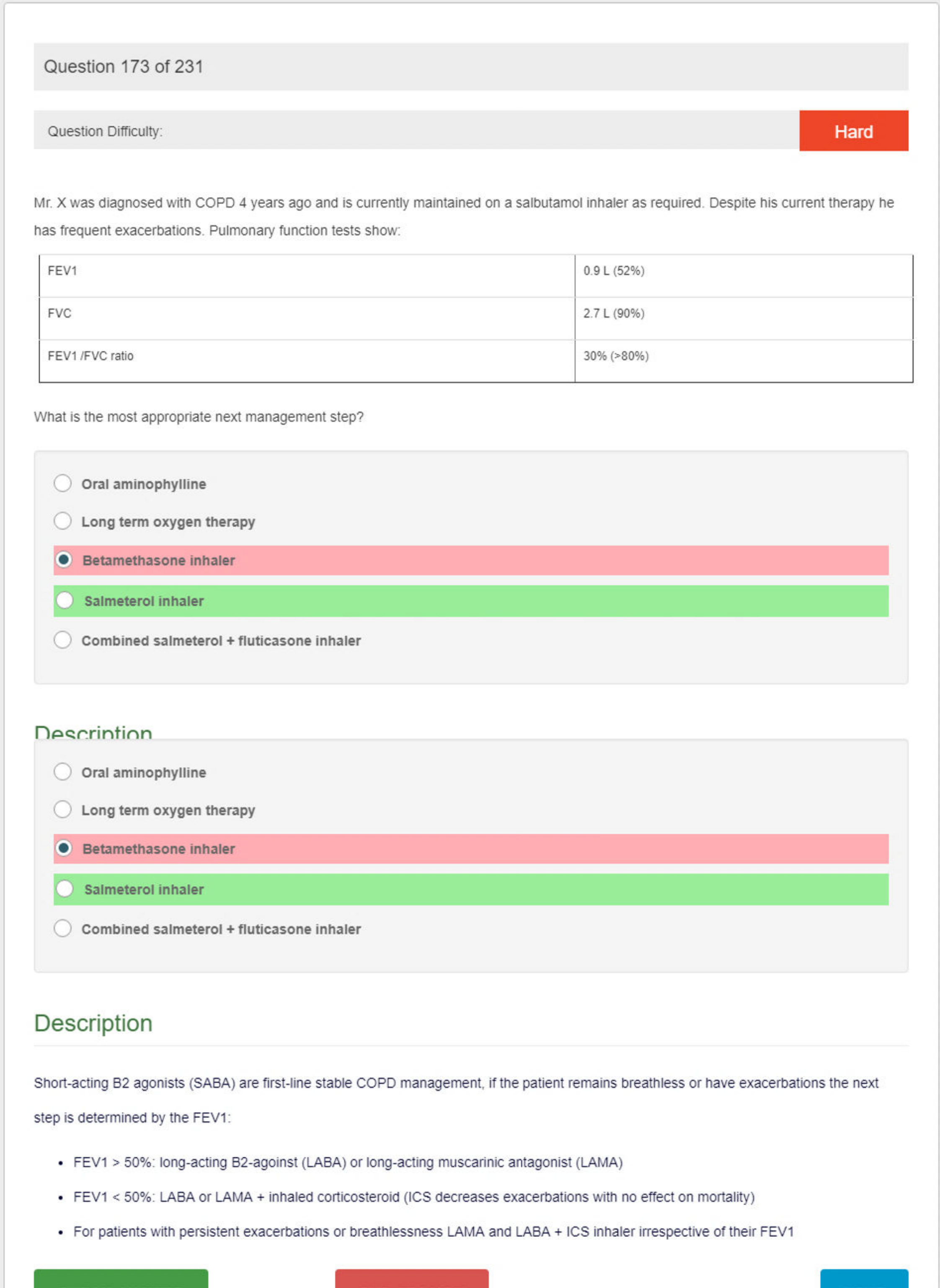
What is the most likely diagnosis?

- ○ Pneumonic effusion
- ○ Esophageal rupture
- ○ Pericarditis
- ● Pulmonary embolism
- ○ Malignant effusion

Description

The pleural fluid shows features of exudative effusion. Exudate appears cloudy with specific gravity > 1.020, fluid LDH > ⅔ the upper limit for serum and protein content >3 g/dL or fluid protein: serum protein > 1/2

Elevated amylase occurs in pancreatitis and esophageal rupture and both cause exudative effusion.



Question 173 of 231

Question Difficulty: **Hard**

Mr. X was diagnosed with COPD 4 years ago and is currently maintained on a salbutamol inhaler as required. Despite his current therapy he has frequent exacerbations. Pulmonary function tests show:

FEV1	0.9 L (52%)
FVC	2.7 L (90%)
FEV1 /FVC ratio	30% (>80%)

What is the most appropriate next management step?

- ○ **Oral aminophylline**
- ○ **Long term oxygen therapy**
- ● **Betamethasone inhaler** 🟥
- ○ **Salmeterol inhaler** 🟩
- ○ **Combined salmeterol + fluticasone inhaler**

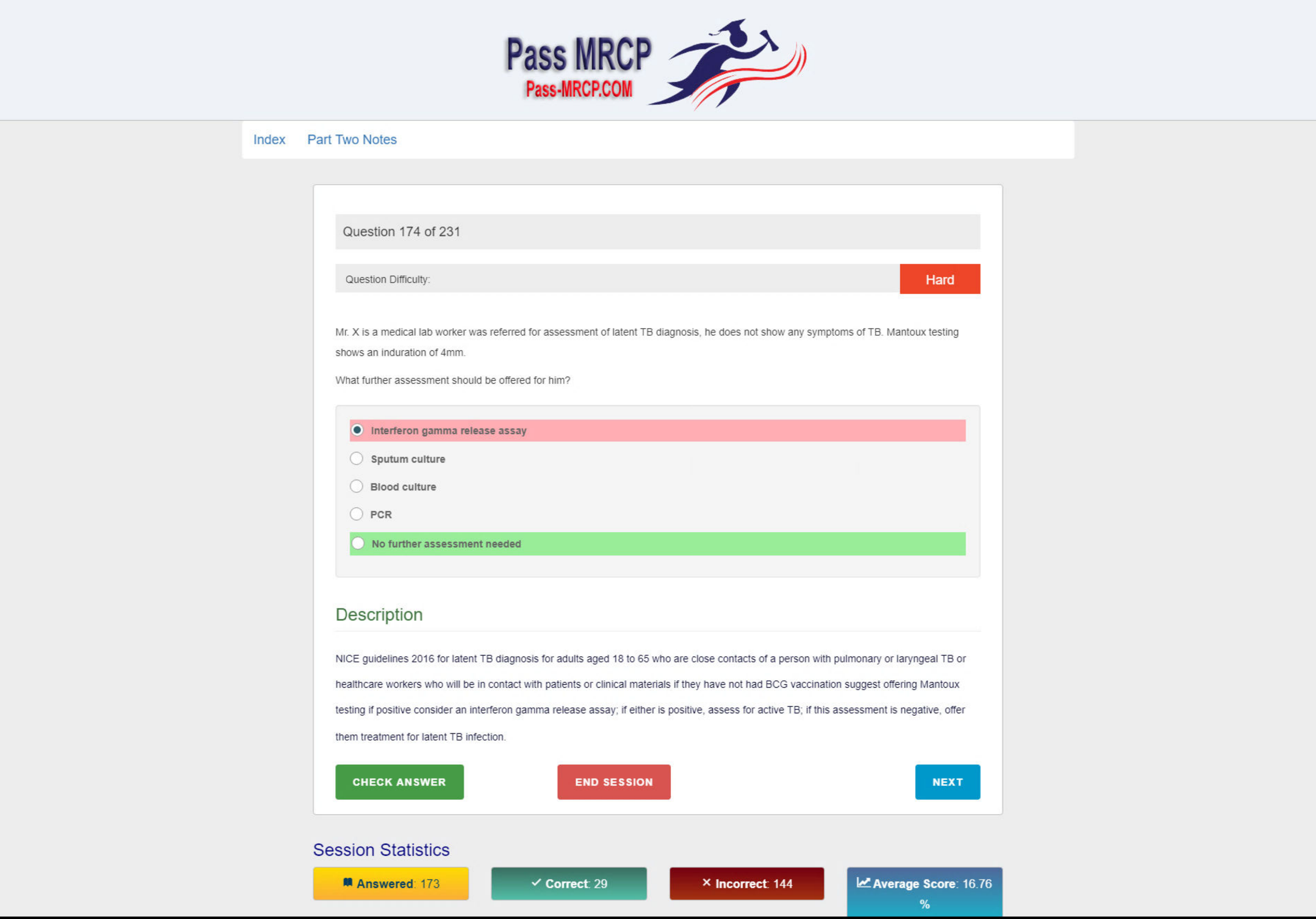
Description

- ○ **Oral aminophylline**
- ○ **Long term oxygen therapy**
- ● **Betamethasone inhaler** 🟥
- ○ **Salmeterol inhaler** 🟩
- ○ **Combined salmeterol + fluticasone inhaler**

Description

Short-acting B2 agonists (SABA) are first-line stable COPD management, if the patient remains breathless or have exacerbations the next step is determined by the FEV1:

- FEV1 > 50%: long-acting B2-agoinst (LABA) or long-acting muscarinic antagonist (LAMA)
- FEV1 < 50%: LABA or LAMA + inhaled corticosteroid (ICS decreases exacerbations with no effect on mortality)
- For patients with persistent exacerbations or breathlessness LAMA and LABA + ICS inhaler irrespective of their FEV1



Question 174 of 231

Question Difficulty: Hard

Mr. X is a medical lab worker was referred for assessment of latent TB diagnosis, he does not show any symptoms of TB. Mantoux testing shows an induration of 4mm.

What further assessment should be offered for him?

- ● Interferon gamma release assay
- ○ Sputum culture
- ○ Blood culture
- ○ PCR
- ○ No further assessment needed

Description

NICE guidelines 2016 for latent TB diagnosis for adults aged 18 to 65 who are close contacts of a person with pulmonary or laryngeal TB or healthcare workers who will be in contact with patients or clinical materials if they have not had BCG vaccination suggest offering Mantoux testing if positive consider an interferon gamma release assay; if either is positive, assess for active TB; if this assessment is negative, offer them treatment for latent TB infection.

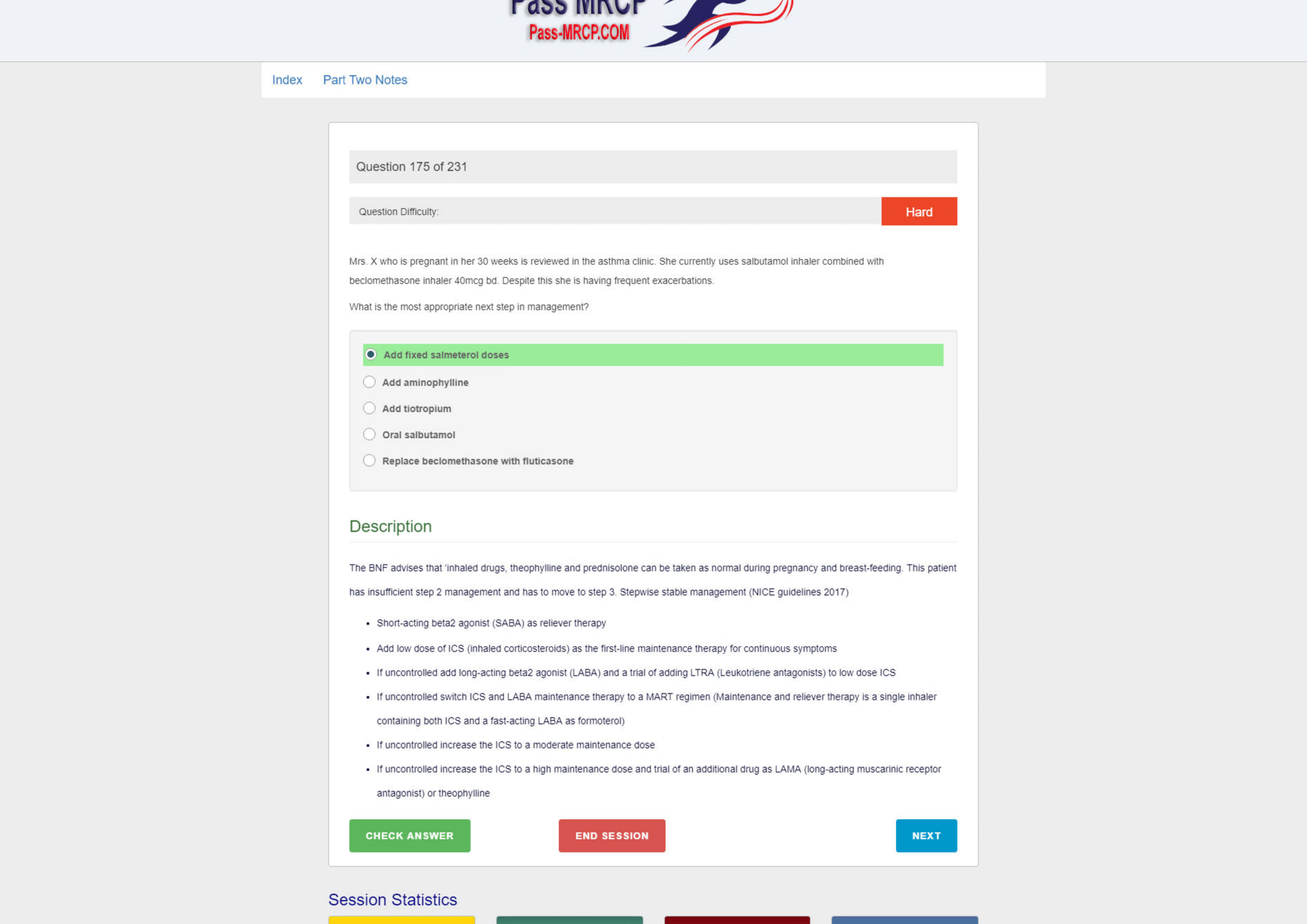
Session Statistics

Answered: 173

✓ Correct: 29

× Incorrect: 144

Average Score: 16.76 %



Question 175 of 231

Question Difficulty: **Hard**

Mrs. X who is pregnant in her 30 weeks is reviewed in the asthma clinic. She currently uses salbutamol inhaler combined with beclomethasone inhaler 40mcg bd. Despite this she is having frequent exacerbations.

What is the most appropriate next step in management?

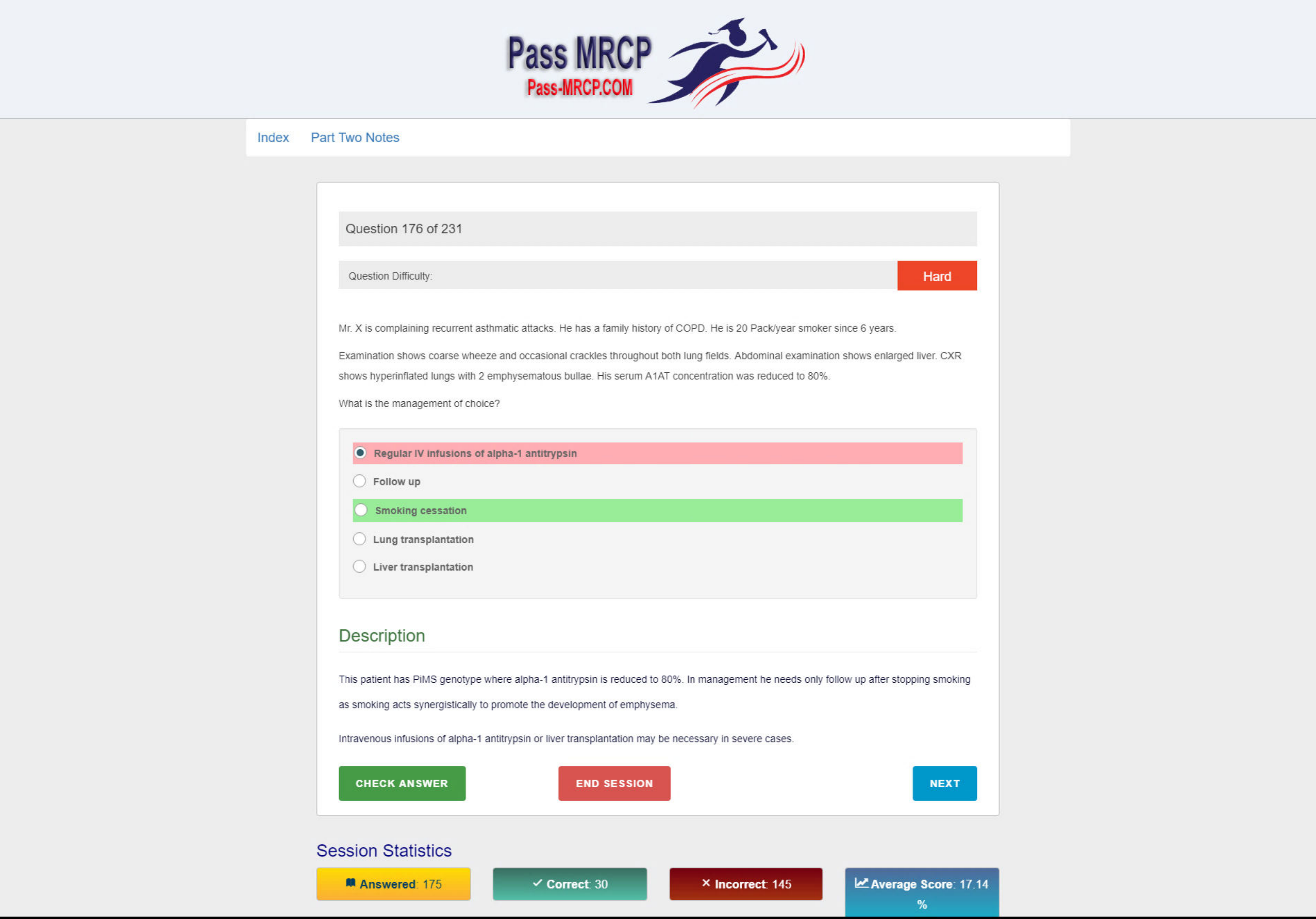
● **Add fixed salmeterol doses**
○ **Add aminophylline**
○ **Add tiotropium**
○ **Oral salbutamol**
○ **Replace beclomethasone with fluticasone**

Description

The BNF advises that 'inhaled drugs, theophylline and prednisolone can be taken as normal during pregnancy and breast-feeding. This patient has insufficient step 2 management and has to move to step 3. Stepwise stable management (NICE guidelines 2017)

- Short-acting beta2 agonist (SABA) as reliever therapy
- Add low dose of ICS (inhaled corticosteroids) as the first-line maintenance therapy for continuous symptoms
- If uncontrolled add long-acting beta2 agonist (LABA) and a trial of adding LTRA (Leukotriene antagonists) to low dose ICS
- If uncontrolled switch ICS and LABA maintenance therapy to a MART regimen (Maintenance and reliever therapy is a single inhaler containing both ICS and a fast-acting LABA as formoterol)
- If uncontrolled increase the ICS to a moderate maintenance dose
- If uncontrolled increase the ICS to a high maintenance dose and trial of an additional drug as LAMA (long-acting muscarinic receptor antagonist) or theophylline

Session Statistics



Question 176 of 231

Question Difficulty: **Hard**

Mr. X is complaining recurrent asthmatic attacks. He has a family history of COPD. He is 20 Pack/year smoker since 6 years.

Examination shows coarse wheeze and occasional crackles throughout both lung fields. Abdominal examination shows enlarged liver. CXR shows hyperinflated lungs with 2 emphysematous bullae. His serum A1AT concentration was reduced to 80%.

What is the management of choice?

- ● **Regular IV infusions of alpha-1 antitrypsin**
- ○ **Follow up**
- ○ **Smoking cessation**
- ○ **Lung transplantation**
- ○ **Liver transplantation**

Description

This patient has PiMS genotype where alpha-1 antitrypsin is reduced to 80%. In management he needs only follow up after stopping smoking as smoking acts synergistically to promote the development of emphysema.

Intravenous infusions of alpha-1 antitrypsin or liver transplantation may be necessary in severe cases.

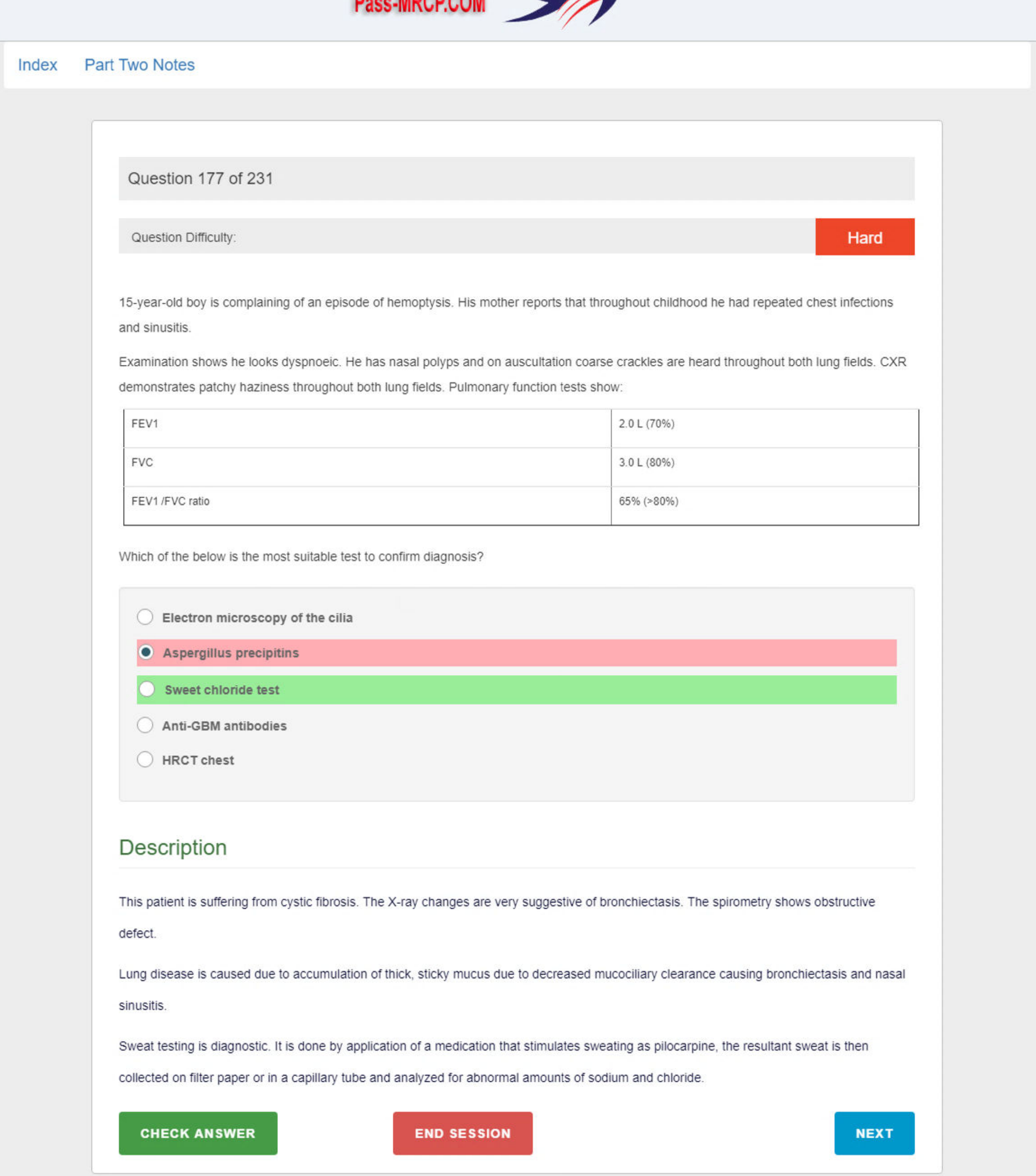
Session Statistics

Answered: 175

✓ **Correct**: 30

✕ **Incorrect**: 145

Average Score: 17.14 %



Question 177 of 231

Question Difficulty: **Hard**

15-year-old boy is complaining of an episode of hemoptysis. His mother reports that throughout childhood he had repeated chest infections and sinusitis.

Examination shows he looks dyspnoeic. He has nasal polyps and on auscultation coarse crackles are heard throughout both lung fields. CXR demonstrates patchy haziness throughout both lung fields. Pulmonary function tests show:

FEV1	2.0 L (70%)
FVC	3.0 L (80%)
FEV1 /FVC ratio	65% (>80%)

Which of the below is the most suitable test to confirm diagnosis?

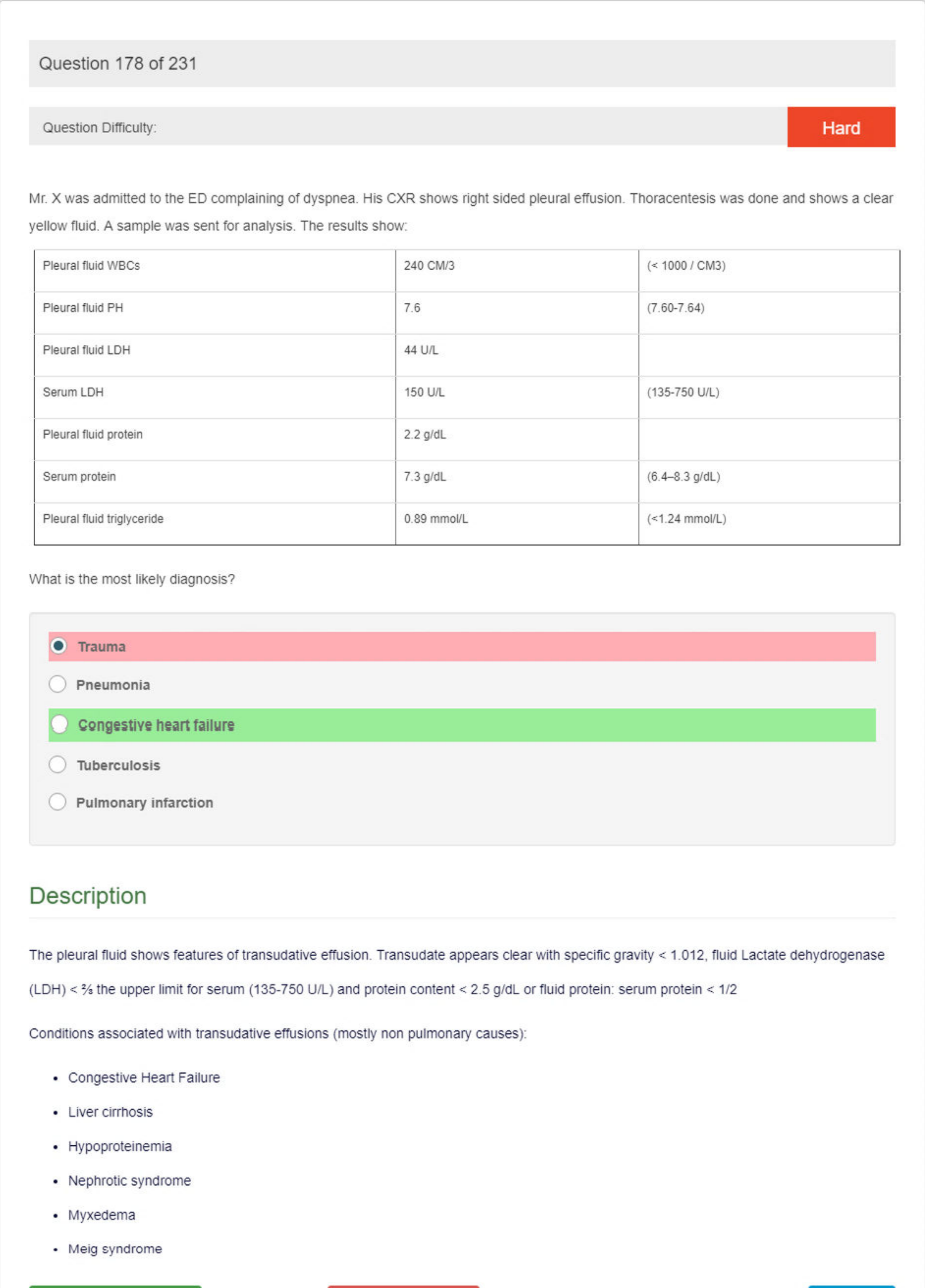
○ **Electron microscopy of the cilia**
● **Aspergillus precipitins**
○ **Sweet chloride test**
○ **Anti-GBM antibodies**
○ **HRCT chest**

Description

This patient is suffering from cystic fibrosis. The X-ray changes are very suggestive of bronchiectasis. The spirometry shows obstructive defect.

Lung disease is caused due to accumulation of thick, sticky mucus due to decreased mucociliary clearance causing bronchiectasis and nasal sinusitis.

Sweat testing is diagnostic. It is done by application of a medication that stimulates sweating as pilocarpine, the resultant sweat is then collected on filter paper or in a capillary tube and analyzed for abnormal amounts of sodium and chloride.



Question 178 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED complaining of dyspnea. His CXR shows right sided pleural effusion. Thoracentesis was done and shows a clear yellow fluid. A sample was sent for analysis. The results show:

Pleural fluid WBCs	240 CM/3	(< 1000 / CM3)
Pleural fluid PH	7.6	(7.60-7.64)
Pleural fluid LDH	44 U/L	
Serum LDH	150 U/L	(135-750 U/L)
Pleural fluid protein	2.2 g/dL	
Serum protein	7.3 g/dL	(6.4–8.3 g/dL)
Pleural fluid triglyceride	0.89 mmol/L	(<1.24 mmol/L)

What is the most likely diagnosis?

● **Trauma**

○ **Pneumonia**

○ **Congestive heart failure**

○ **Tuberculosis**

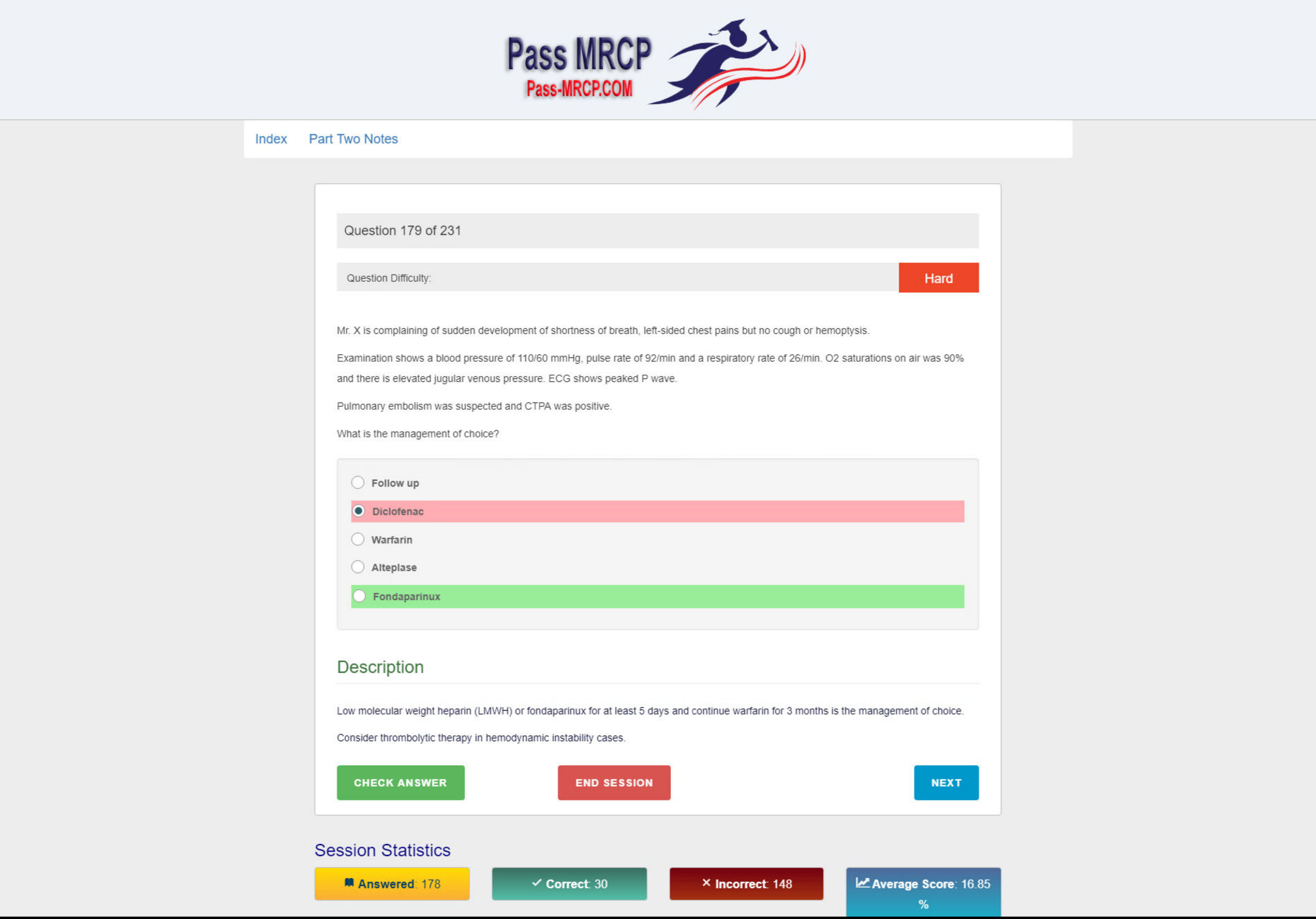
○ **Pulmonary infarction**

Description

The pleural fluid shows features of transudative effusion. Transudate appears clear with specific gravity < 1.012, fluid Lactate dehydrogenase (LDH) < ⅔ the upper limit for serum (135-750 U/L) and protein content < 2.5 g/dL or fluid protein: serum protein < 1/2

Conditions associated with transudative effusions (mostly non pulmonary causes):

- Congestive Heart Failure
- Liver cirrhosis
- Hypoproteinemia
- Nephrotic syndrome
- Myxedema
- Meig syndrome



Question 179 of 231

Question Difficulty: Hard

Mr. X is complaining of sudden development of shortness of breath, left-sided chest pains but no cough or hemoptysis.

Examination shows a blood pressure of 110/60 mmHg, pulse rate of 92/min and a respiratory rate of 26/min. O2 saturations on air was 90% and there is elevated jugular venous pressure. ECG shows peaked P wave.

Pulmonary embolism was suspected and CTPA was positive.

What is the management of choice?

- ○ Follow up
- ● Diclofenac
- ○ Warfarin
- ○ Alteplase
- ○ Fondaparinux

Description

Low molecular weight heparin (LMWH) or fondaparinux for at least 5 days and continue warfarin for 3 months is the management of choice.

Consider thrombolytic therapy in hemodynamic instability cases.

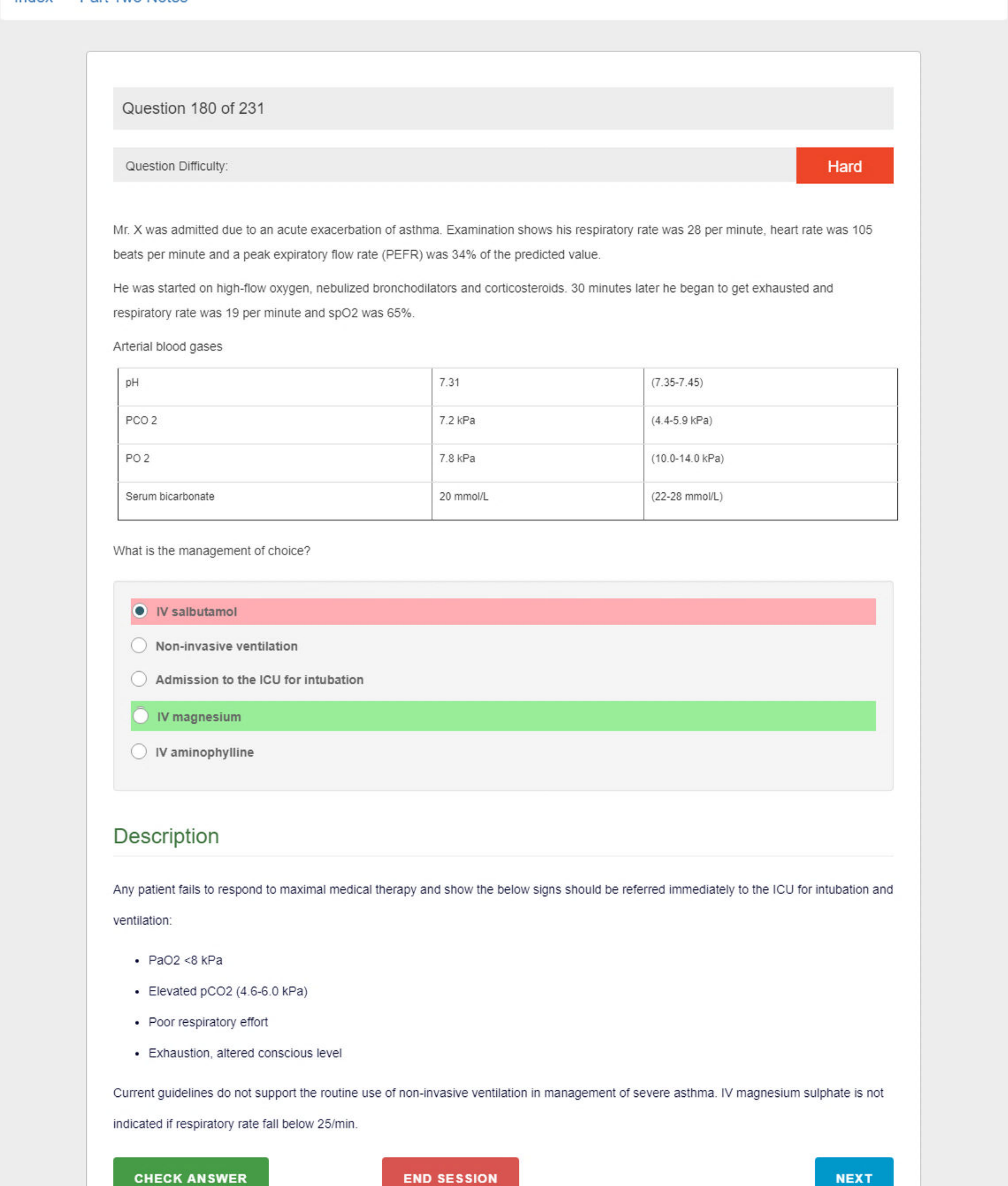
Session Statistics

Answered: 178

✓ Correct: 30

✕ Incorrect: 148

Average Score: 16.85 %



Question 180 of 231

Question Difficulty: **Hard**

Mr. X was admitted due to an acute exacerbation of asthma. Examination shows his respiratory rate was 28 per minute, heart rate was 105 beats per minute and a peak expiratory flow rate (PEFR) was 34% of the predicted value.

He was started on high-flow oxygen, nebulized bronchodilators and corticosteroids. 30 minutes later he began to get exhausted and respiratory rate was 19 per minute and spO2 was 65%.

Arterial blood gases

pH	7.31	(7.35-7.45)
PCO 2	7.2 kPa	(4.4-5.9 kPa)
PO 2	7.8 kPa	(10.0-14.0 kPa)
Serum bicarbonate	20 mmol/L	(22-28 mmol/L)

What is the management of choice?

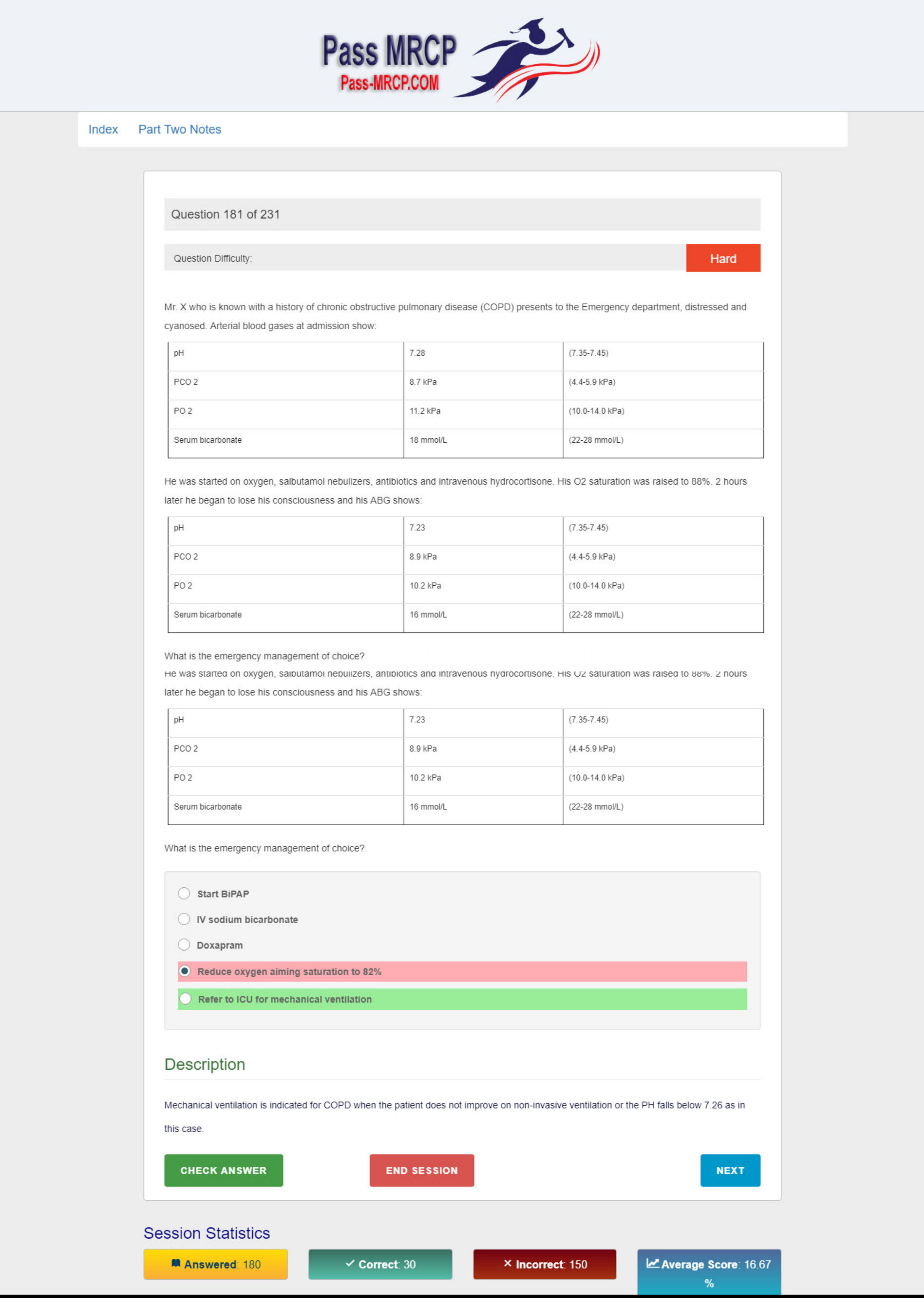
● **IV salbutamol**
○ **Non-invasive ventilation**
○ **Admission to the ICU for intubation**
○ **IV magnesium**
○ **IV aminophylline**

Description

Any patient fails to respond to maximal medical therapy and show the below signs should be referred immediately to the ICU for intubation and ventilation:

- PaO2 <8 kPa
- Elevated pCO2 (4.6-6.0 kPa)
- Poor respiratory effort
- Exhaustion, altered conscious level

Current guidelines do not support the routine use of non-invasive ventilation in management of severe asthma. IV magnesium sulphate is not indicated if respiratory rate fall below 25/min.



Question 181 of 231

Question Difficulty: **Hard**

Mr. X who is known with a history of chronic obstructive pulmonary disease (COPD) presents to the Emergency department, distressed and cyanosed. Arterial blood gases at admission show:

pH	7.28	(7.35-7.45)
PCO 2	8.7 kPa	(4.4-5.9 kPa)
PO 2	11.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	18 mmol/L	(22-28 mmol/L)

He was started on oxygen, salbutamol nebulizers, antibiotics and intravenous hydrocortisone. His O2 saturation was raised to 88%. 2 hours later he began to lose his consciousness and his ABG shows:

pH	7.23	(7.35-7.45)
PCO 2	8.9 kPa	(4.4-5.9 kPa)
PO 2	10.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	16 mmol/L	(22-28 mmol/L)

What is the emergency management of choice?

He was started on oxygen, salbutamol nebulizers, antibiotics and intravenous hydrocortisone. His O2 saturation was raised to 88%. 2 hours later he began to lose his consciousness and his ABG shows:

pH	7.23	(7.35-7.45)
PCO 2	8.9 kPa	(4.4-5.9 kPa)
PO 2	10.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	16 mmol/L	(22-28 mmol/L)

What is the emergency management of choice?

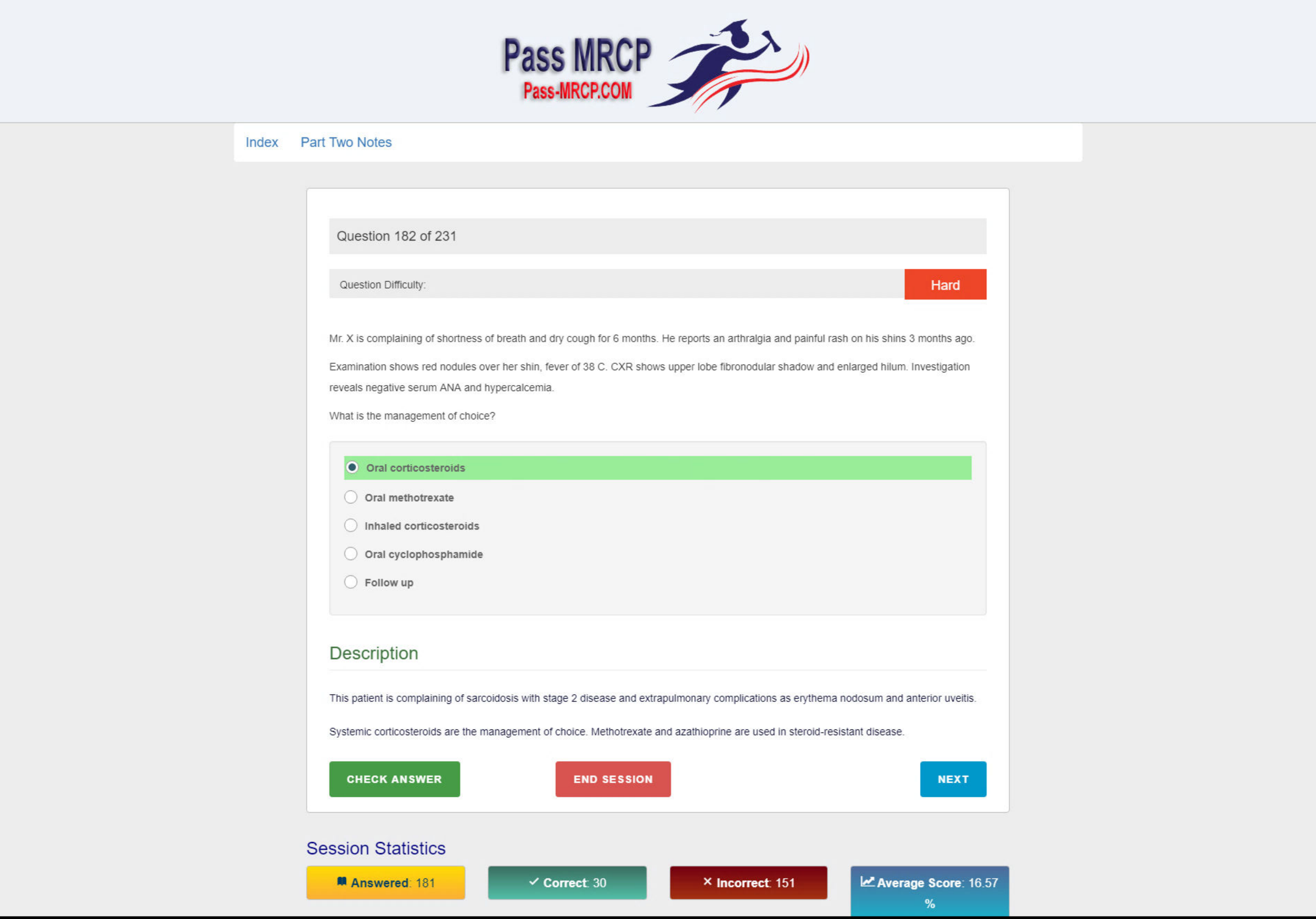
- ○ **Start BiPAP**
- ○ **IV sodium bicarbonate**
- ○ **Doxapram**
- ● **Reduce oxygen aiming saturation to 82%**
- ○ **Refer to ICU for mechanical ventilation**

Description

Mechanical ventilation is indicated for COPD when the patient does not improve on non-invasive ventilation or the PH falls below 7.26 as in this case.

Session Statistics

Answered: 180 | **Correct**: 30 | **Incorrect**: 150 | **Average Score**: 16.67 %



Question 182 of 231

Question Difficulty: **Hard**

Mr. X is complaining of shortness of breath and dry cough for 6 months. He reports an arthralgia and painful rash on his shins 3 months ago.

Examination shows red nodules over her shin, fever of 38 C. CXR shows upper lobe fibronodular shadow and enlarged hilum. Investigation reveals negative serum ANA and hypercalcemia.

What is the management of choice?

- ● **Oral corticosteroids**
- ○ **Oral methotrexate**
- ○ **Inhaled corticosteroids**
- ○ **Oral cyclophosphamide**
- ○ **Follow up**

Description

This patient is complaining of sarcoidosis with stage 2 disease and extrapulmonary complications as erythema nodosum and anterior uveitis.

Systemic corticosteroids are the management of choice. Methotrexate and azathioprine are used in steroid-resistant disease.

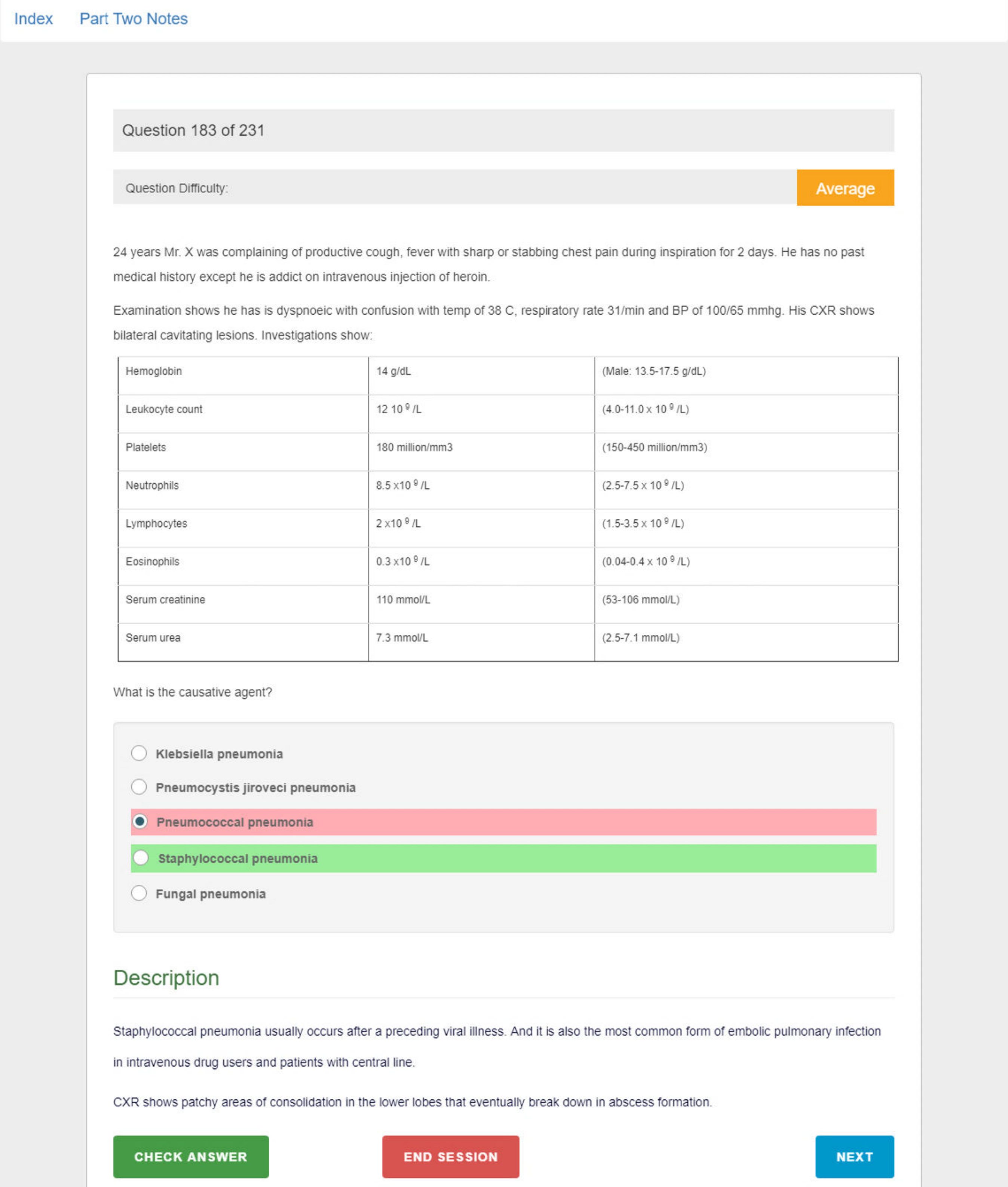
Session Statistics

Answered: 181

✓ **Correct**: 30

✕ **Incorrect**: 151

Average Score: 16.57 %



Question 183 of 231

Question Difficulty: Average

24 years Mr. X was complaining of productive cough, fever with sharp or stabbing chest pain during inspiration for 2 days. He has no past medical history except he is addict on intravenous injection of heroin.

Examination shows he has is dyspnoeic with confusion with temp of 38 C, respiratory rate 31/min and BP of 100/65 mmhg. His CXR shows bilateral cavitating lesions. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 10^9/L	(4.0-11.0 x 10^9/L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	8.5 x10^9/L	(2.5-7.5 x 10^9/L)
Lymphocytes	2 x10^9/L	(1.5-3.5 x 10^9/L)
Eosinophils	0.3 x10^9/L	(0.04-0.4 x 10^9/L)
Serum creatinine	110 mmol/L	(53-106 mmol/L)
Serum urea	7.3 mmol/L	(2.5-7.1 mmol/L)

What is the causative agent?

○ **Klebsiella pneumonia**

○ **Pneumocystis jiroveci pneumonia**

● **Pneumococcal pneumonia**

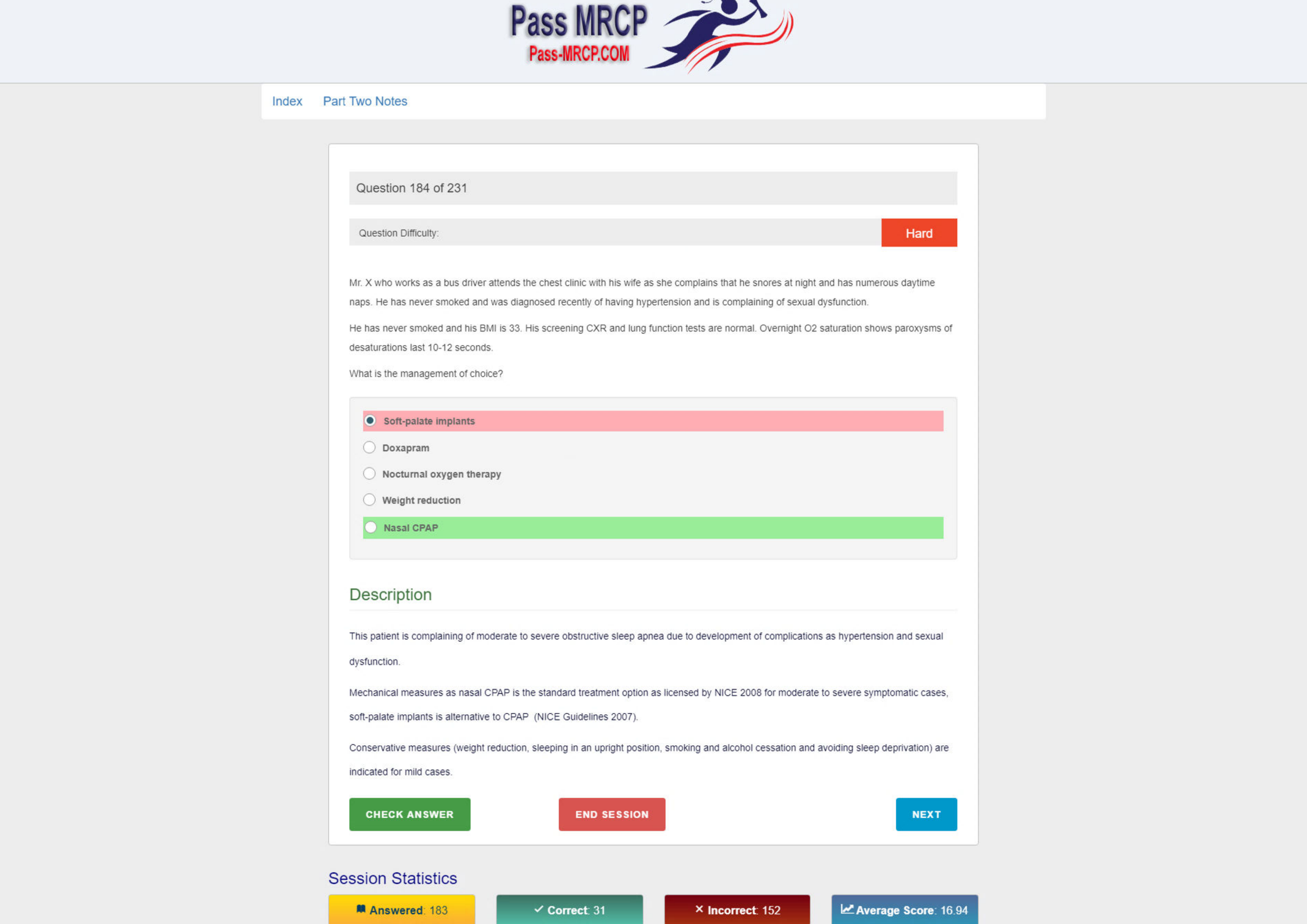
○ **Staphylococcal pneumonia**

○ **Fungal pneumonia**

Description

Staphylococcal pneumonia usually occurs after a preceding viral illness. And it is also the most common form of embolic pulmonary infection in intravenous drug users and patients with central line.

CXR shows patchy areas of consolidation in the lower lobes that eventually break down in abscess formation.



Question 184 of 231

Question Difficulty: Hard

Mr. X who works as a bus driver attends the chest clinic with his wife as she complains that he snores at night and has numerous daytime naps. He has never smoked and was diagnosed recently of having hypertension and is complaining of sexual dysfunction.

He has never smoked and his BMI is 33. His screening CXR and lung function tests are normal. Overnight O2 saturation shows paroxysms of desaturations last 10-12 seconds.

What is the management of choice?

- ● **Soft-palate implants**
- ○ **Doxapram**
- ○ **Nocturnal oxygen therapy**
- ○ **Weight reduction**
- ○ **Nasal CPAP**

Description

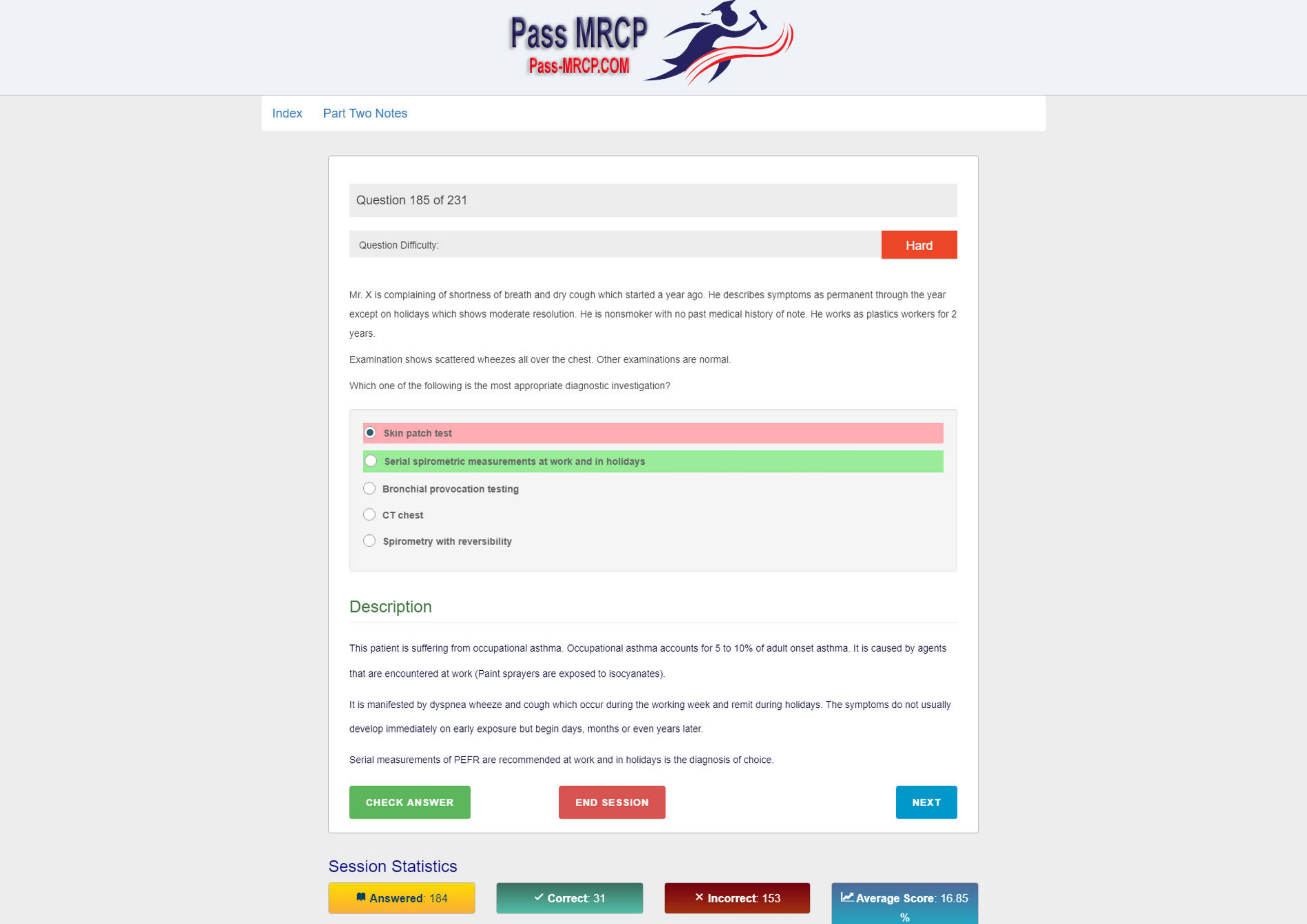
This patient is complaining of moderate to severe obstructive sleep apnea due to development of complications as hypertension and sexual dysfunction.

Mechanical measures as nasal CPAP is the standard treatment option as licensed by NICE 2008 for moderate to severe symptomatic cases, soft-palate implants is alternative to CPAP (NICE Guidelines 2007).

Conservative measures (weight reduction, sleeping in an upright position, smoking and alcohol cessation and avoiding sleep deprivation) are indicated for mild cases.

Session Statistics

Answered: 183
Correct: 31
Incorrect: 152
Average Score: 16.94



Question 185 of 231

Question Difficulty: Hard

Mr. X is complaining of shortness of breath and dry cough which started a year ago. He describes symptoms as permanent through the year except on holidays which shows moderate resolution. He is nonsmoker with no past medical history of note. He works as plastics workers for 2 years.

Examination shows scattered wheezes all over the chest. Other examinations are normal.

Which one of the following is the most appropriate diagnostic investigation?

- ● Skin patch test
- ○ Serial spirometric measurements at work and in holidays
- ○ Bronchial provocation testing
- ○ CT chest
- ○ Spirometry with reversibility

Description

This patient is suffering from occupational asthma. Occupational asthma accounts for 5 to 10% of adult onset asthma. It is caused by agents that are encountered at work (Paint sprayers are exposed to isocyanates).

It is manifested by dyspnea wheeze and cough which occur during the working week and remit during holidays. The symptoms do not usually develop immediately on early exposure but begin days, months or even years later.

Serial measurements of PEFR are recommended at work and in holidays is the diagnosis of choice.

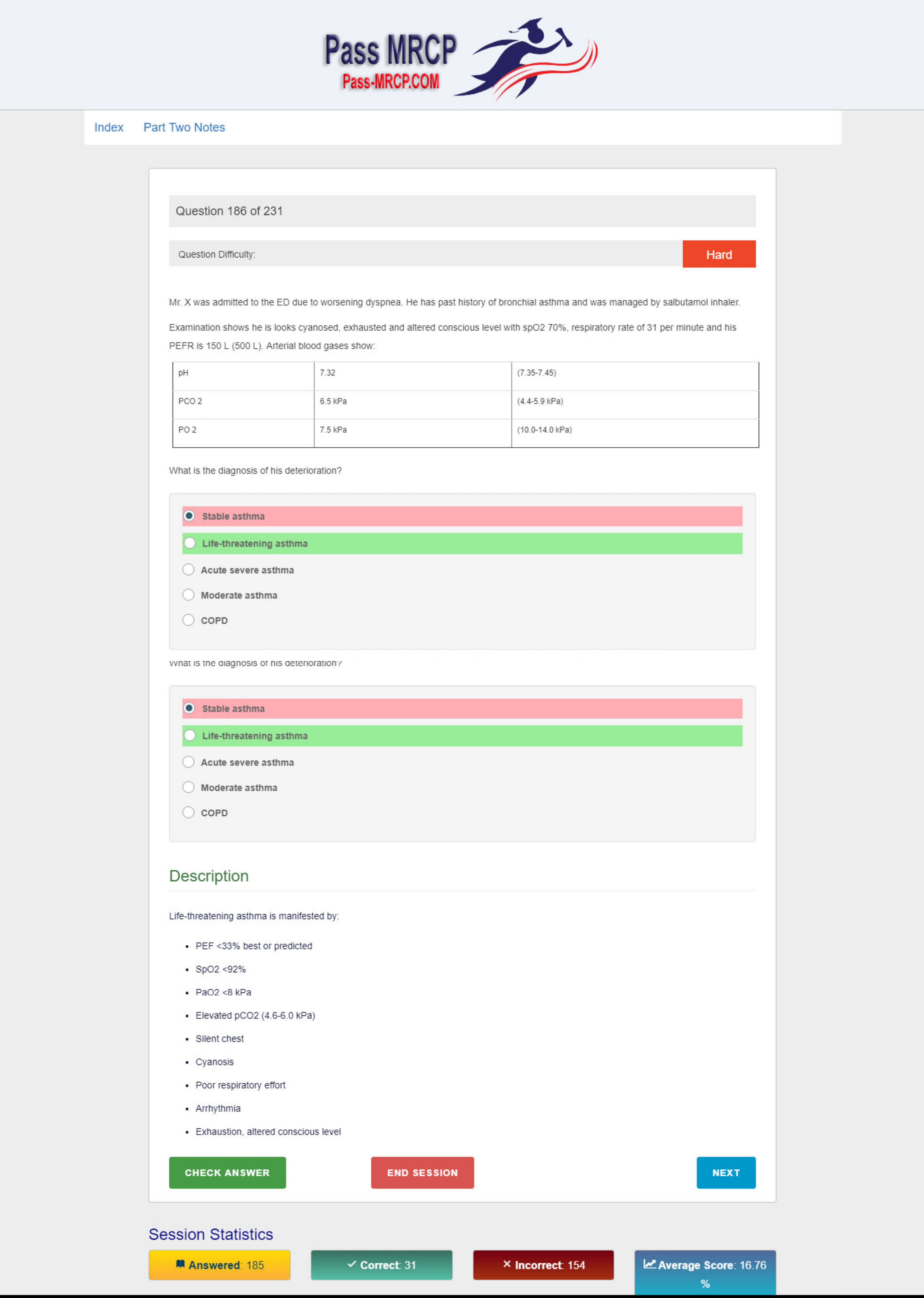
Session Statistics

Answered: 184

✓ Correct: 31

✕ Incorrect: 153

Average Score: 16.85 %



Question 186 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED due to worsening dyspnea. He has past history of bronchial asthma and was managed by salbutamol inhaler.

Examination shows he is looks cyanosed, exhausted and altered conscious level with spO2 70%, respiratory rate of 31 per minute and his PEFR is 150 L (500 L). Arterial blood gases show:

pH	7.32	(7.35-7.45)
PCO 2	6.5 kPa	(4.4-5.9 kPa)
PO 2	7.5 kPa	(10.0-14.0 kPa)

What is the diagnosis of his deterioration?

- ● **Stable asthma**
- ○ **Life-threatening asthma**
- ○ **Acute severe asthma**
- ○ **Moderate asthma**
- ○ **COPD**

What is the diagnosis of his deterioration?

- ● **Stable asthma**
- ○ **Life-threatening asthma**
- ○ **Acute severe asthma**
- ○ **Moderate asthma**
- ○ **COPD**

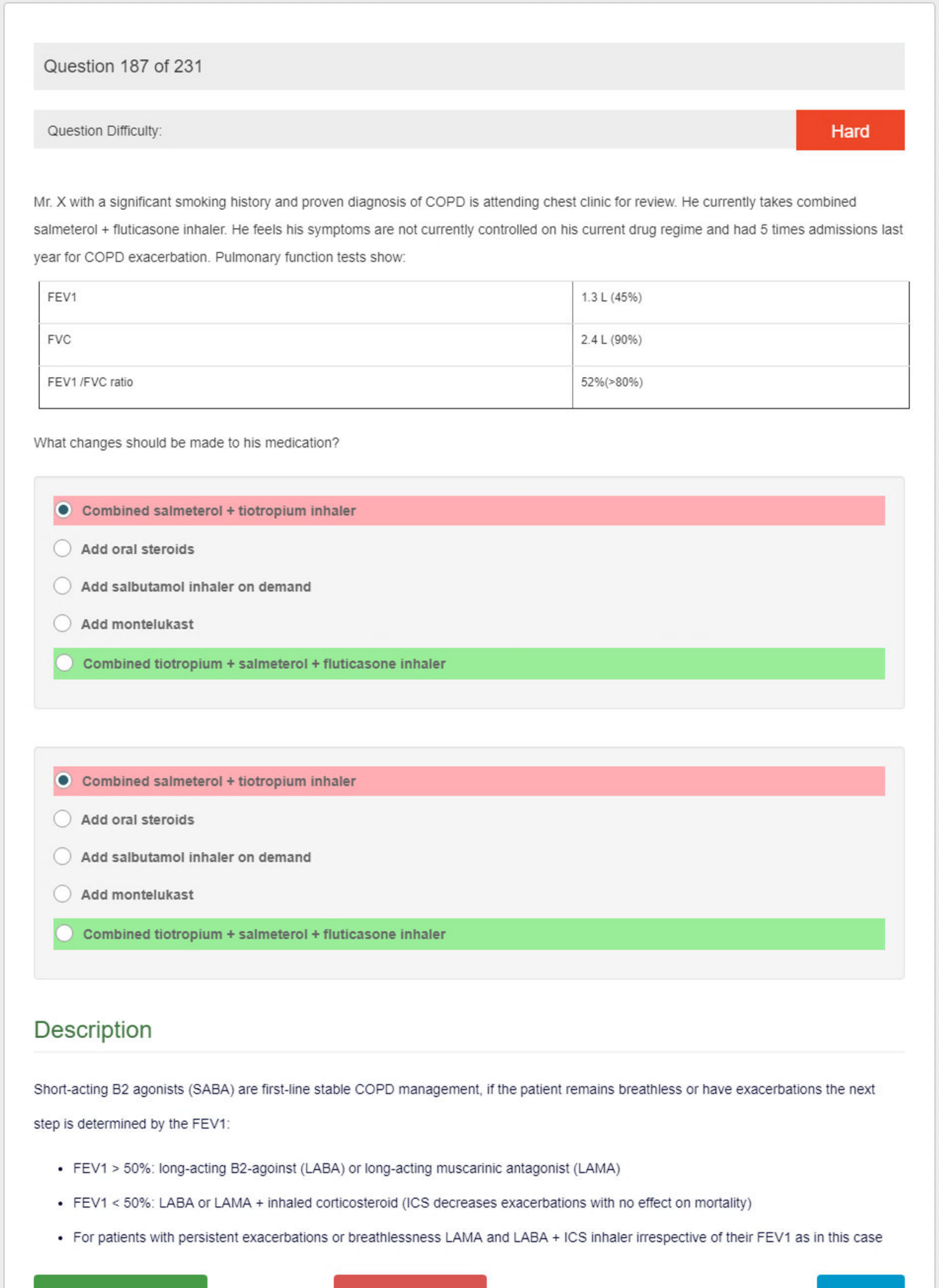
Description

Life-threatening asthma is manifested by:

- PEF <33% best or predicted
- SpO2 <92%
- PaO2 <8 kPa
- Elevated pCO2 (4.6-6.0 kPa)
- Silent chest
- Cyanosis
- Poor respiratory effort
- Arrhythmia
- Exhaustion, altered conscious level

Session Statistics

Answered: 185
✓ **Correct**: 31
✕ **Incorrect**: 154
Average Score: 16.76 %



Question 187 of 231

Question Difficulty: **Hard**

Mr. X with a significant smoking history and proven diagnosis of COPD is attending chest clinic for review. He currently takes combined salmeterol + fluticasone inhaler. He feels his symptoms are not currently controlled on his current drug regime and had 5 times admissions last year for COPD exacerbation. Pulmonary function tests show:

FEV1	1.3 L (45%)
FVC	2.4 L (90%)
FEV1 /FVC ratio	52%(>80%)

What changes should be made to his medication?

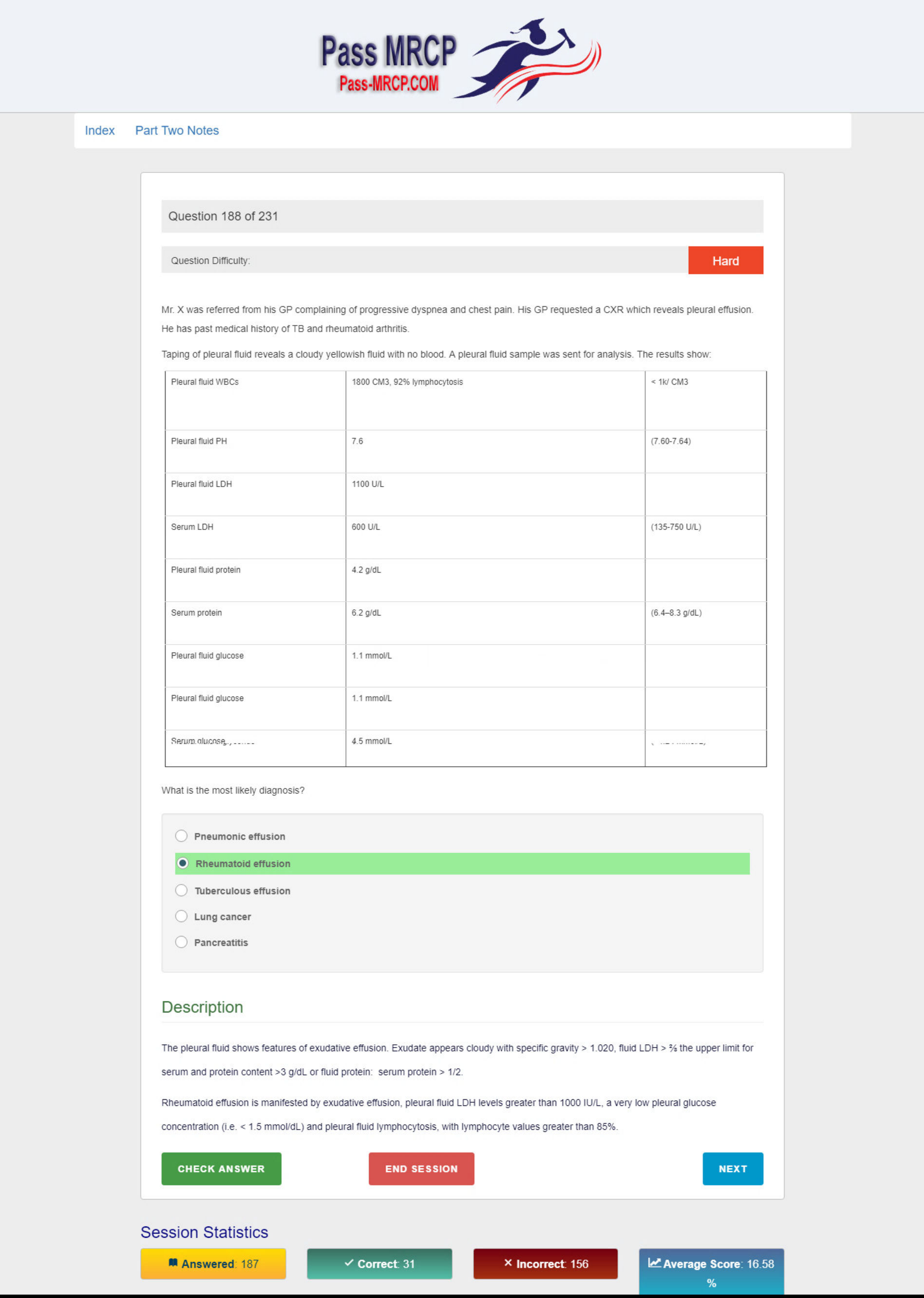
- ● **Combined salmeterol + tiotropium inhaler**
- ○ **Add oral steroids**
- ○ **Add salbutamol inhaler on demand**
- ○ **Add montelukast**
- ○ **Combined tiotropium + salmeterol + fluticasone inhaler**

- ● **Combined salmeterol + tiotropium inhaler**
- ○ **Add oral steroids**
- ○ **Add salbutamol inhaler on demand**
- ○ **Add montelukast**
- ○ **Combined tiotropium + salmeterol + fluticasone inhaler**

Description

Short-acting B2 agonists (SABA) are first-line stable COPD management, if the patient remains breathless or have exacerbations the next step is determined by the FEV1:

- FEV1 > 50%: long-acting B2-agoinst (LABA) or long-acting muscarinic antagonist (LAMA)
- FEV1 < 50%: LABA or LAMA + inhaled corticosteroid (ICS decreases exacerbations with no effect on mortality)
- For patients with persistent exacerbations or breathlessness LAMA and LABA + ICS inhaler irrespective of their FEV1 as in this case



Question 188 of 231

Question Difficulty: **Hard**

Mr. X was referred from his GP complaining of progressive dyspnea and chest pain. His GP requested a CXR which reveals pleural effusion. He has past medical history of TB and rheumatoid arthritis.

Taping of pleural fluid reveals a cloudy yellowish fluid with no blood. A pleural fluid sample was sent for analysis. The results show:

Pleural fluid WBCs	1800 CM3, 92% lymphocytosis	< 1k/ CM3
Pleural fluid PH	7.6	(7.60-7.64)
Pleural fluid LDH	1100 U/L	
Serum LDH	600 U/L	(135-750 U/L)
Pleural fluid protein	4.2 g/dL	
Serum protein	6.2 g/dL	(6.4–8.3 g/dL)
Pleural fluid glucose	1.1 mmol/L	
Pleural fluid glucose	1.1 mmol/L	
Serum glucose	4.5 mmol/L	[illegible]

What is the most likely diagnosis?

○ **Pneumonic effusion**
● **Rheumatoid effusion**
○ **Tuberculous effusion**
○ **Lung cancer**
○ **Pancreatitis**

Description

The pleural fluid shows features of exudative effusion. Exudate appears cloudy with specific gravity > 1.020, fluid LDH > ⅔ the upper limit for serum and protein content >3 g/dL or fluid protein: serum protein > 1/2.

Rheumatoid effusion is manifested by exudative effusion, pleural fluid LDH levels greater than 1000 IU/L, a very low pleural glucose concentration (i.e. < 1.5 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte values greater than 85%.

Session Statistics

Answered: 187
✓ **Correct**: 31
✕ **Incorrect**: 156
Average Score: 16.58 %

Question 188 of 231

Question Difficulty: **Hard**

Mr. X was referred from his GP complaining of progressive dyspnea and chest pain. His GP requested a CXR which reveals pleural effusion. He has past medical history of TB and rheumatoid arthritis.

Taping of pleural fluid reveals a cloudy yellowish fluid with no blood. A pleural fluid sample was sent for analysis. The results show:

Pleural fluid WBCs	1800 CM3, 92% lymphocytosis	< 1k/ CM3
Pleural fluid PH	7.6	(7.60-7.64)
Pleural fluid LDH	1100 U/L	
Serum LDH	600 U/L	(135-750 U/L)
Pleural fluid protein	4.2 g/dL	
Serum protein	6.2 g/dL	(6.4–8.3 g/dL)
Pleural fluid glucose	1.1 mmol/L	
Pleural fluid glucose	1.1 mmol/L	
Pleural fluid amylase	70 U/L	(<100 U/L)

What is the most likely diagnosis?

○ **Pneumonic effusion**
● **Rheumatoid effusion**
○ **Tuberculous effusion**
○ **Lung cancer**
○ **Pancreatitis**

Description

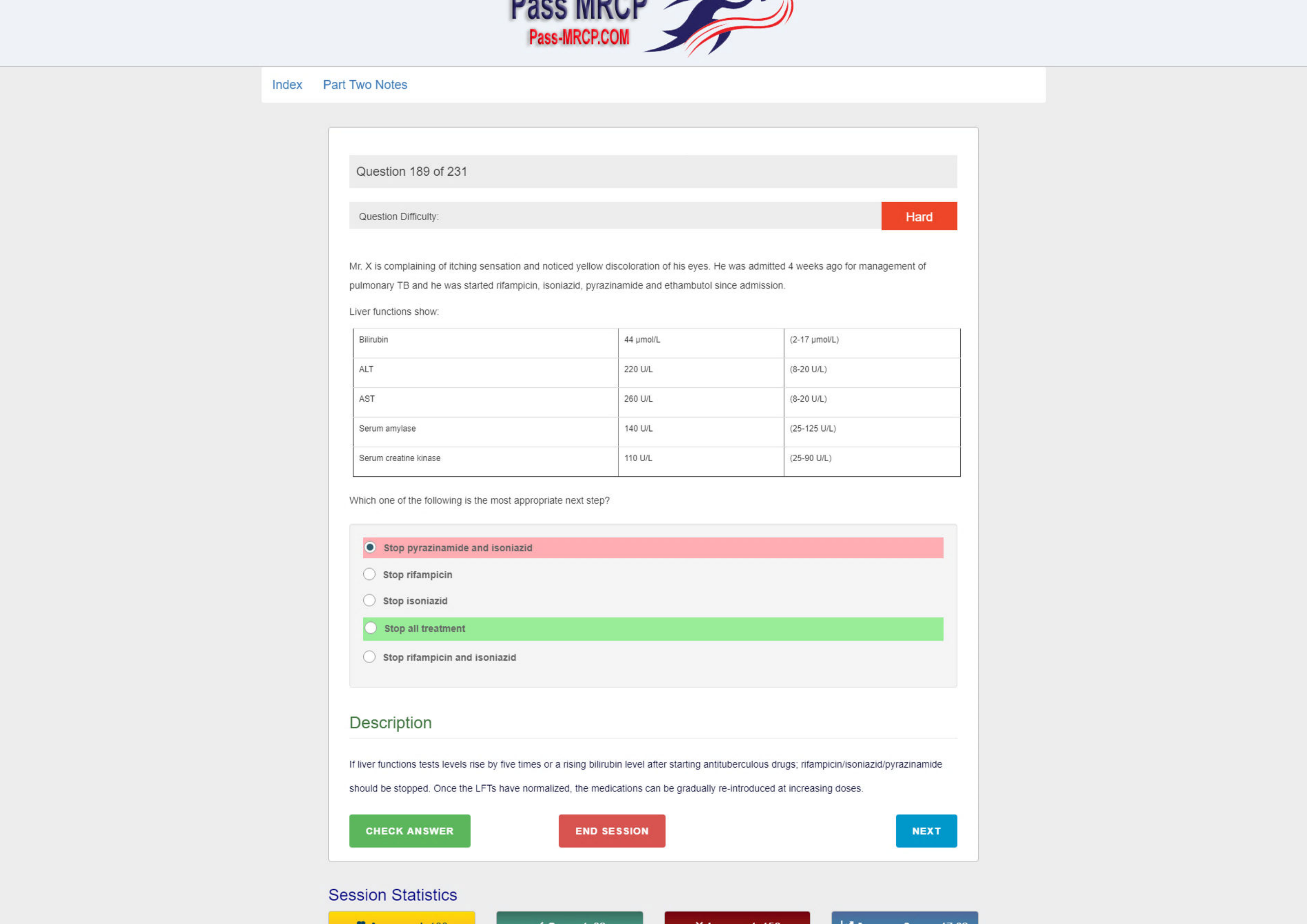
The pleural fluid shows features of exudative effusion. Exudate appears cloudy with specific gravity > 1.020, fluid LDH > ⅔ the upper limit for serum and protein content >3 g/dL or fluid protein: serum protein > 1/2.

Rheumatoid effusion is manifested by exudative effusion, pleural fluid LDH levels greater than 1000 IU/L, a very low pleural glucose concentration (i.e. < 1.5 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte values greater than 85%.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 187 ✓ **Correct**: 31 ✕ **Incorrect**: 156 **Average Score**: 16.58 %



Question 189 of 231

Question Difficulty: Hard

Mr. X is complaining of itching sensation and noticed yellow discoloration of his eyes. He was admitted 4 weeks ago for management of pulmonary TB and he was started rifampicin, isoniazid, pyrazinamide and ethambutol since admission.

Liver functions show:

Bilirubin	44 µmol/L	(2-17 µmol/L)
ALT	220 U/L	(8-20 U/L)
AST	260 U/L	(8-20 U/L)
Serum amylase	140 U/L	(25-125 U/L)
Serum creatine kinase	110 U/L	(25-90 U/L)

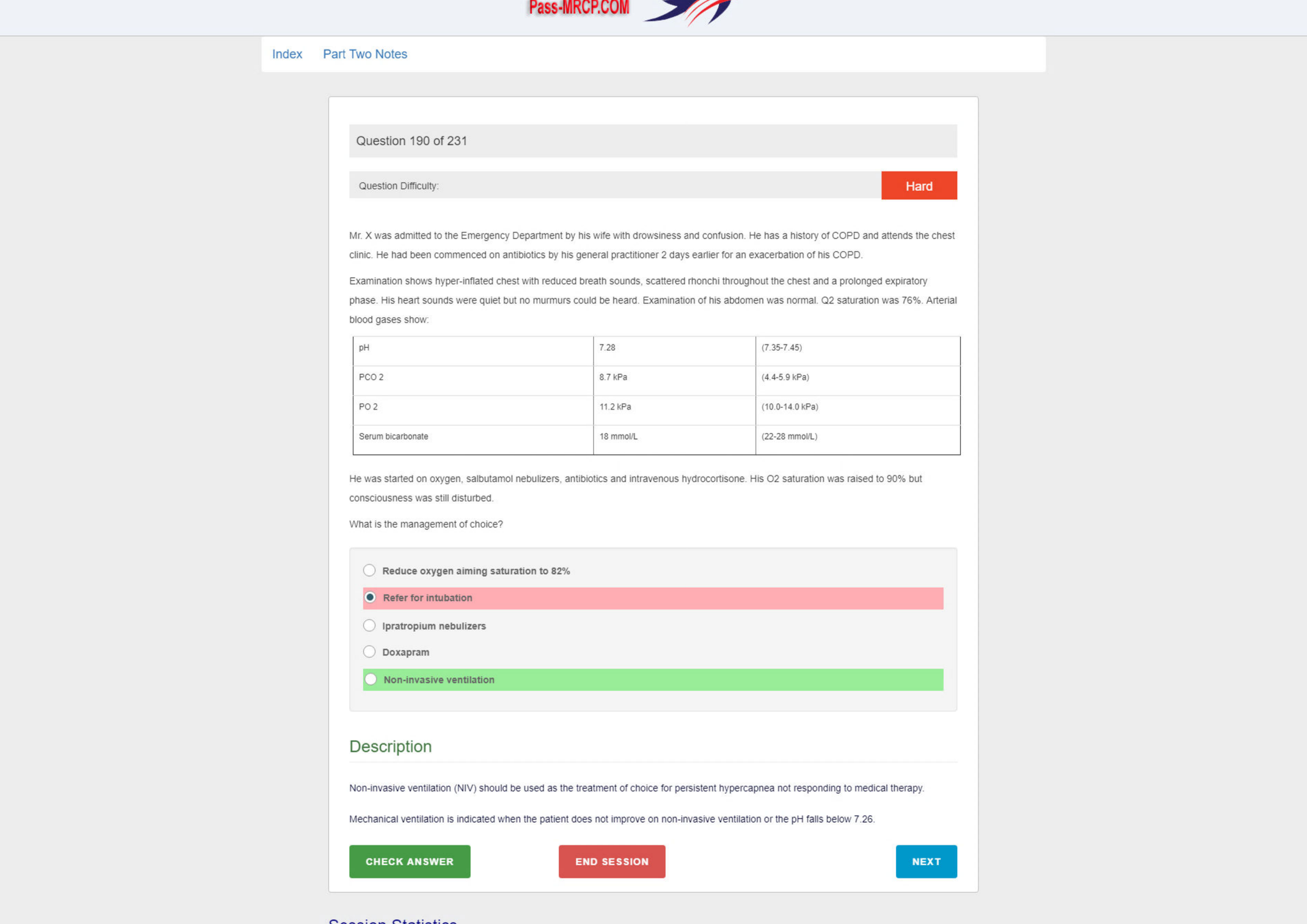
Which one of the following is the most appropriate next step?

- ● **Stop pyrazinamide and isoniazid**
- ○ **Stop rifampicin**
- ○ **Stop isoniazid**
- ○ **Stop all treatment**
- ○ **Stop rifampicin and isoniazid**

Description

If liver functions tests levels rise by five times or a rising bilirubin level after starting antituberculous drugs; rifampicin/isoniazid/pyrazinamide should be stopped. Once the LFTs have normalized, the medications can be gradually re-introduced at increasing doses.

Session Statistics



Question 190 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the Emergency Department by his wife with drowsiness and confusion. He has a history of COPD and attends the chest clinic. He had been commenced on antibiotics by his general practitioner 2 days earlier for an exacerbation of his COPD.

Examination shows hyper-inflated chest with reduced breath sounds, scattered rhonchi throughout the chest and a prolonged expiratory phase. His heart sounds were quiet but no murmurs could be heard. Examination of his abdomen was normal. Q2 saturation was 76%. Arterial blood gases show:

pH	7.28	(7.35-7.45)
PCO 2	8.7 kPa	(4.4-5.9 kPa)
PO 2	11.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	18 mmol/L	(22-28 mmol/L)

He was started on oxygen, salbutamol nebulizers, antibiotics and intravenous hydrocortisone. His O2 saturation was raised to 90% but consciousness was still disturbed.

What is the management of choice?

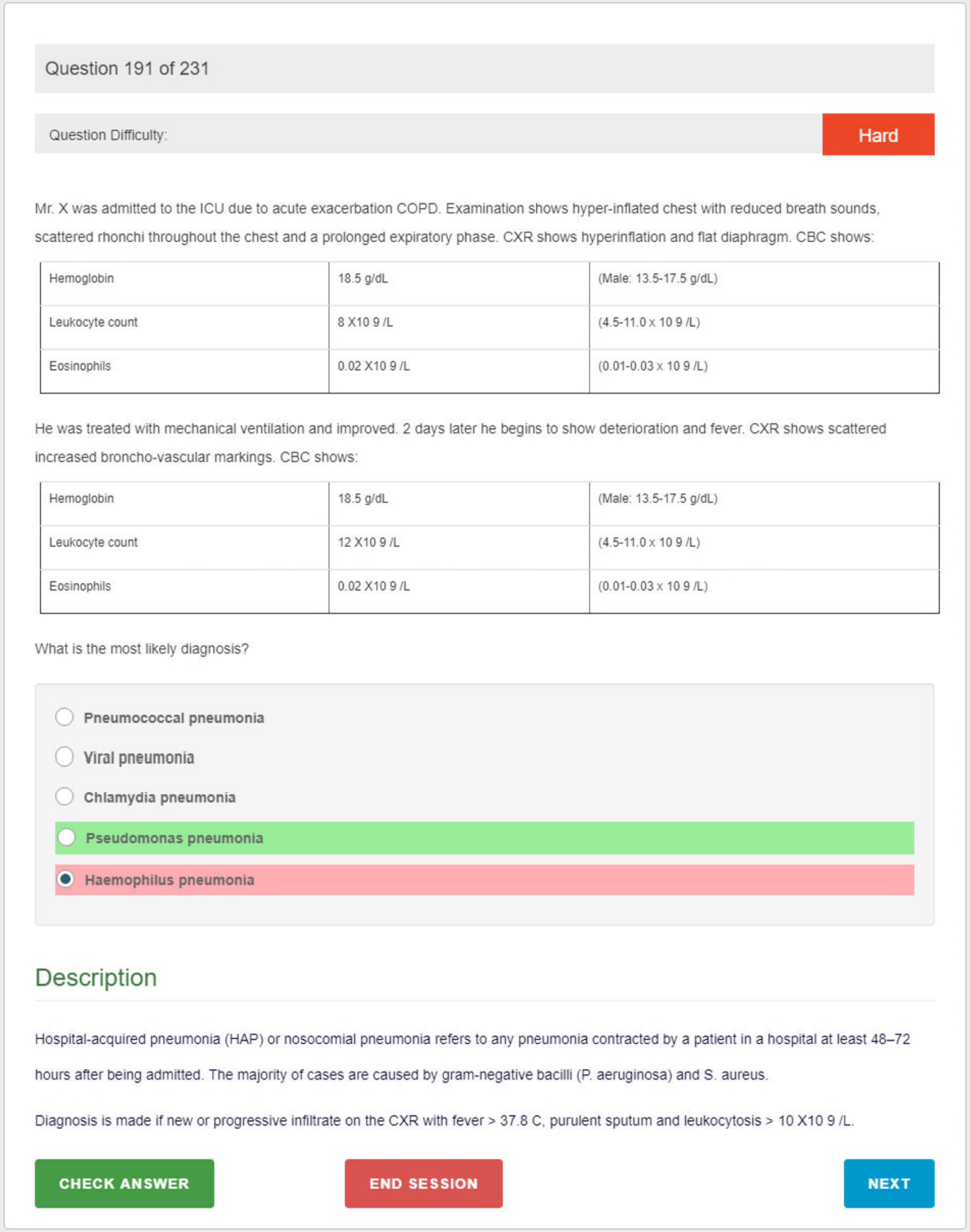
- ○ **Reduce oxygen aiming saturation to 82%**
- ● **Refer for intubation**
- ○ **Ipratropium nebulizers**
- ○ **Doxapram**
- ○ **Non-invasive ventilation**

Description

Non-invasive ventilation (NIV) should be used as the treatment of choice for persistent hypercapnea not responding to medical therapy.

Mechanical ventilation is indicated when the patient does not improve on non-invasive ventilation or the pH falls below 7.26.

Session Statistics



Question 191 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ICU due to acute exacerbation COPD. Examination shows hyper-inflated chest with reduced breath sounds, scattered rhonchi throughout the chest and a prolonged expiratory phase. CXR shows hyperinflation and flat diaphragm. CBC shows:

Hemoglobin	18.5 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 X10 9 /L	(4.5-11.0 x 10 9 /L)
Eosinophils	0.02 X10 9 /L	(0.01-0.03 x 10 9 /L)

He was treated with mechanical ventilation and improved. 2 days later he begins to show deterioration and fever. CXR shows scattered increased broncho-vascular markings. CBC shows:

Hemoglobin	18.5 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	12 X10 9 /L	(4.5-11.0 x 10 9 /L)
Eosinophils	0.02 X10 9 /L	(0.01-0.03 x 10 9 /L)

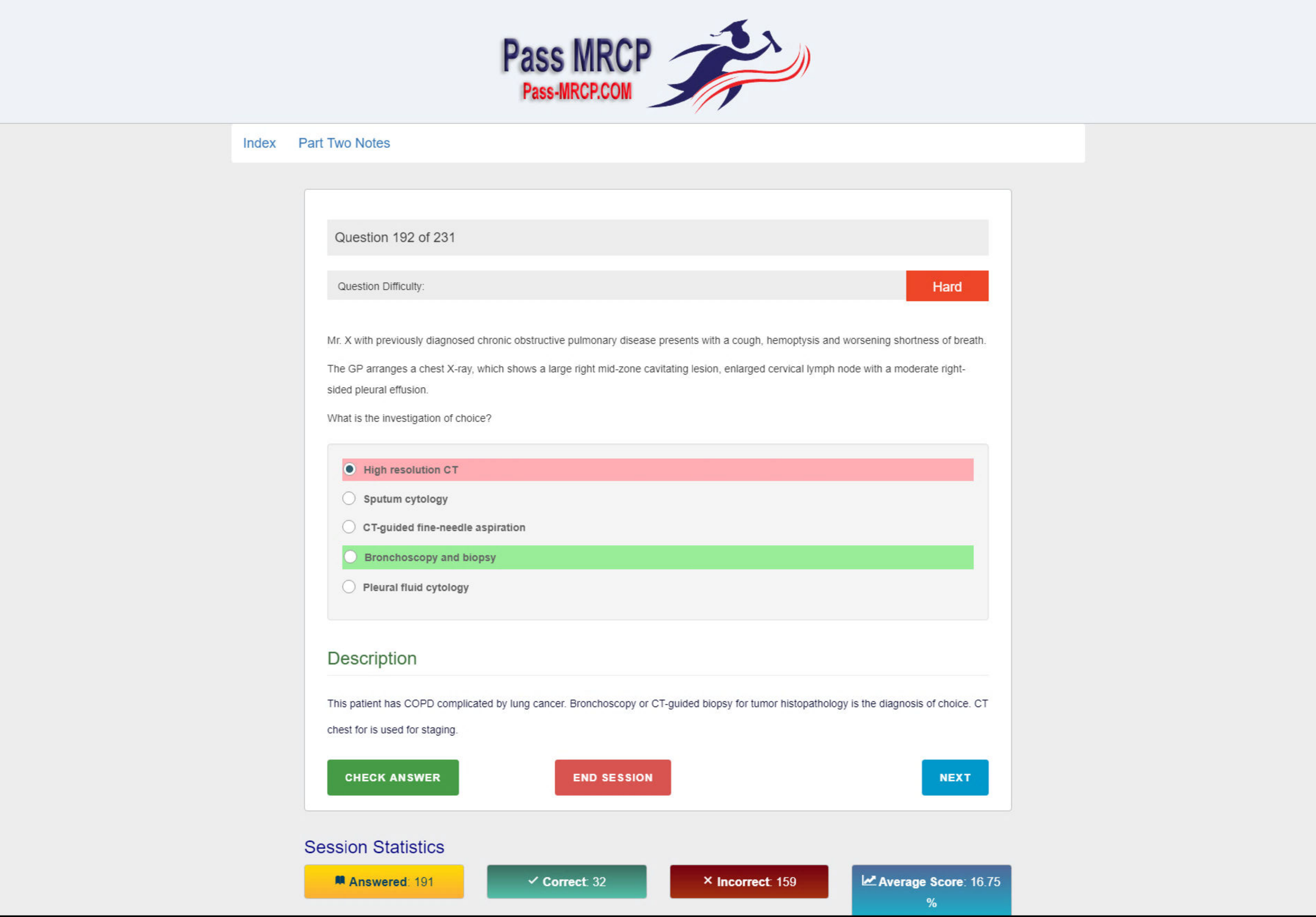
What is the most likely diagnosis?

- ○ **Pneumococcal pneumonia**
- ○ **Viral pneumonia**
- ○ **Chlamydia pneumonia**
- ○ **Pseudomonas pneumonia**
- ● **Haemophilus pneumonia**

Description

Hospital-acquired pneumonia (HAP) or nosocomial pneumonia refers to any pneumonia contracted by a patient in a hospital at least 48–72 hours after being admitted. The majority of cases are caused by gram-negative bacilli (P. aeruginosa) and S. aureus.

Diagnosis is made if new or progressive infiltrate on the CXR with fever > 37.8 C, purulent sputum and leukocytosis > 10 X10 9 /L.



Question 192 of 231

Question Difficulty: **Hard**

Mr. X with previously diagnosed chronic obstructive pulmonary disease presents with a cough, hemoptysis and worsening shortness of breath.

The GP arranges a chest X-ray, which shows a large right mid-zone cavitating lesion, enlarged cervical lymph node with a moderate right-sided pleural effusion.

What is the investigation of choice?

- ● **High resolution CT** 🟥
- ○ **Sputum cytology**
- ○ **CT-guided fine-needle aspiration**
- ○ **Bronchoscopy and biopsy** 🟩
- ○ **Pleural fluid cytology**

Description

This patient has COPD complicated by lung cancer. Bronchoscopy or CT-guided biopsy for tumor histopathology is the diagnosis of choice. CT chest for is used for staging.

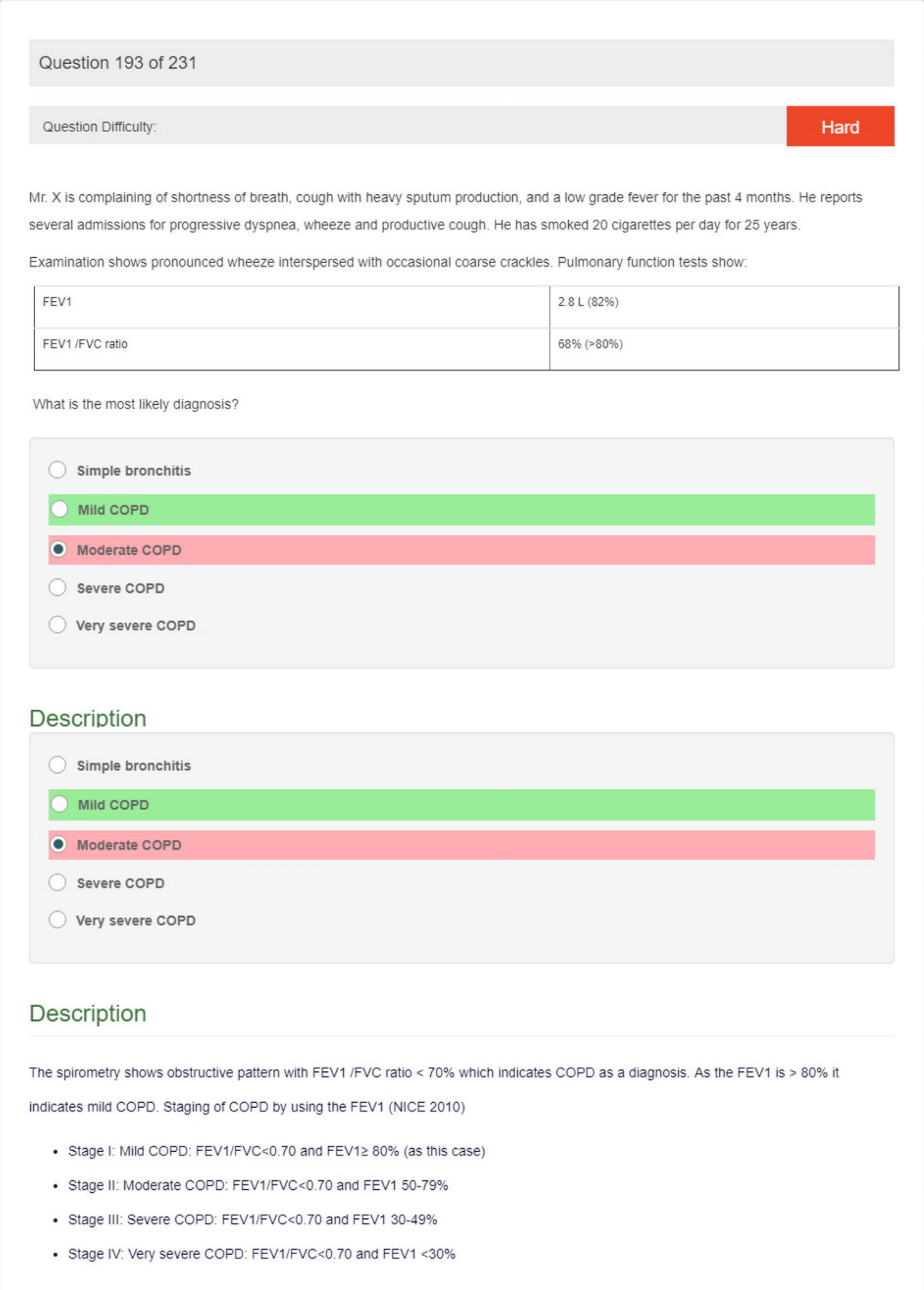
Session Statistics

Answered: 191

✓ **Correct**: 32

× **Incorrect**: 159

Average Score: 16.75 %



Question 193 of 231

Question Difficulty: **Hard**

Mr. X is complaining of shortness of breath, cough with heavy sputum production, and a low grade fever for the past 4 months. He reports several admissions for progressive dyspnea, wheeze and productive cough. He has smoked 20 cigarettes per day for 25 years.

Examination shows pronounced wheeze interspersed with occasional coarse crackles. Pulmonary function tests show:

FEV1	2.8 L (82%)
FEV1 /FVC ratio	68% (>80%)

What is the most likely diagnosis?

- ○ **Simple bronchitis**
- ○ **Mild COPD**
- ● **Moderate COPD**
- ○ **Severe COPD**
- ○ **Very severe COPD**

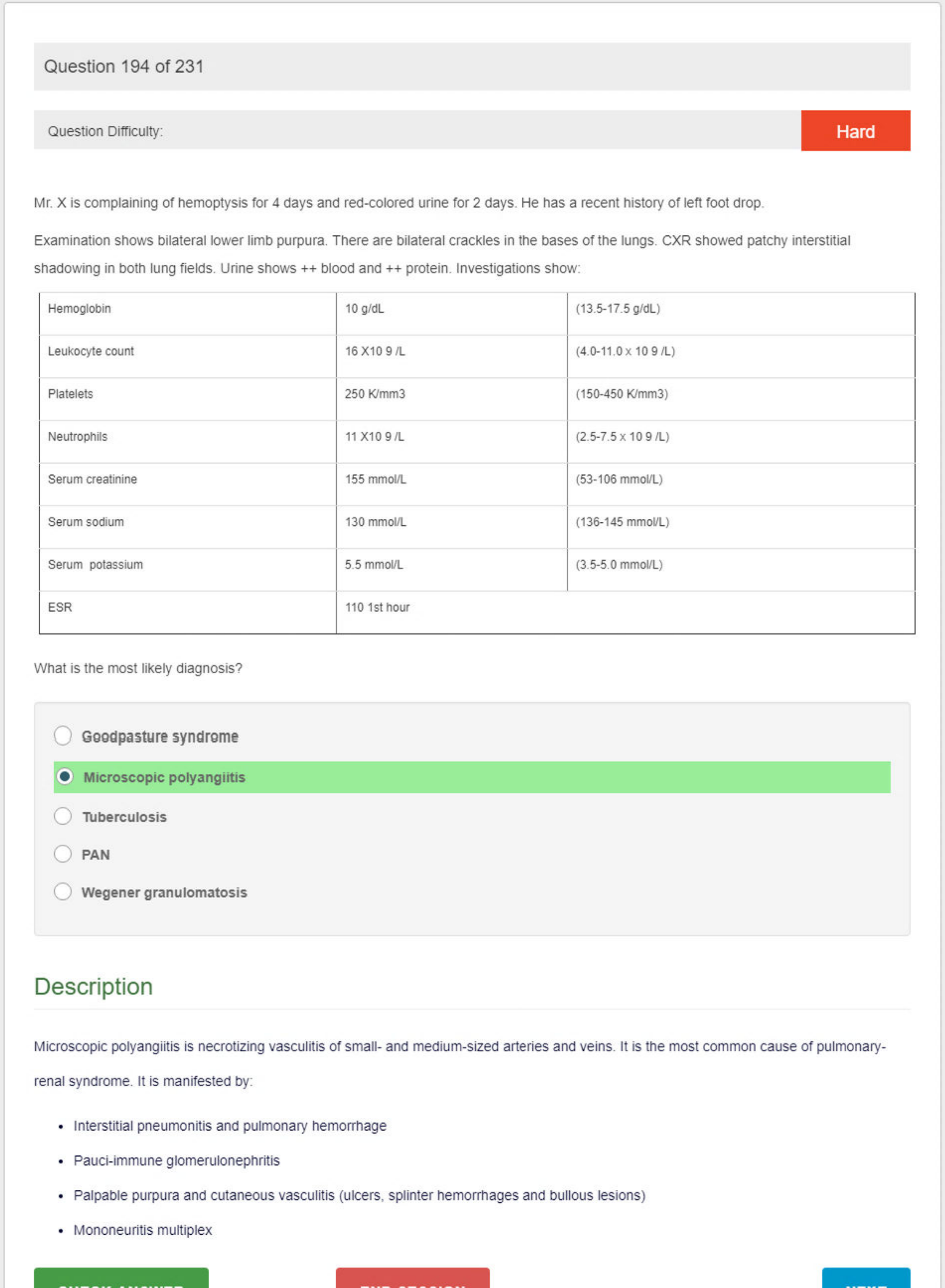
Description

- ○ **Simple bronchitis**
- ○ **Mild COPD**
- ● **Moderate COPD**
- ○ **Severe COPD**
- ○ **Very severe COPD**

Description

The spirometry shows obstructive pattern with FEV1 /FVC ratio < 70% which indicates COPD as a diagnosis. As the FEV1 is > 80% it indicates mild COPD. Staging of COPD by using the FEV1 (NICE 2010)

- Stage I: Mild COPD: FEV1/FVC<0.70 and FEV1≥ 80% (as this case)
- Stage II: Moderate COPD: FEV1/FVC<0.70 and FEV1 50-79%
- Stage III: Severe COPD: FEV1/FVC<0.70 and FEV1 30-49%
- Stage IV: Very severe COPD: FEV1/FVC<0.70 and FEV1 <30%



Question 194 of 231

Question Difficulty: **Hard**

Mr. X is complaining of hemoptysis for 4 days and red-colored urine for 2 days. He has a recent history of left foot drop.

Examination shows bilateral lower limb purpura. There are bilateral crackles in the bases of the lungs. CXR showed patchy interstitial shadowing in both lung fields. Urine shows ++ blood and ++ protein. Investigations show:

Hemoglobin	10 g/dL	(13.5-17.5 g/dL)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	11 X10 9 /L	(2.5-7.5 x 10 9 /L)
Serum creatinine	155 mmol/L	(53-106 mmol/L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	5.5 mmol/L	(3.5-5.0 mmol/L)
ESR	110 1st hour	

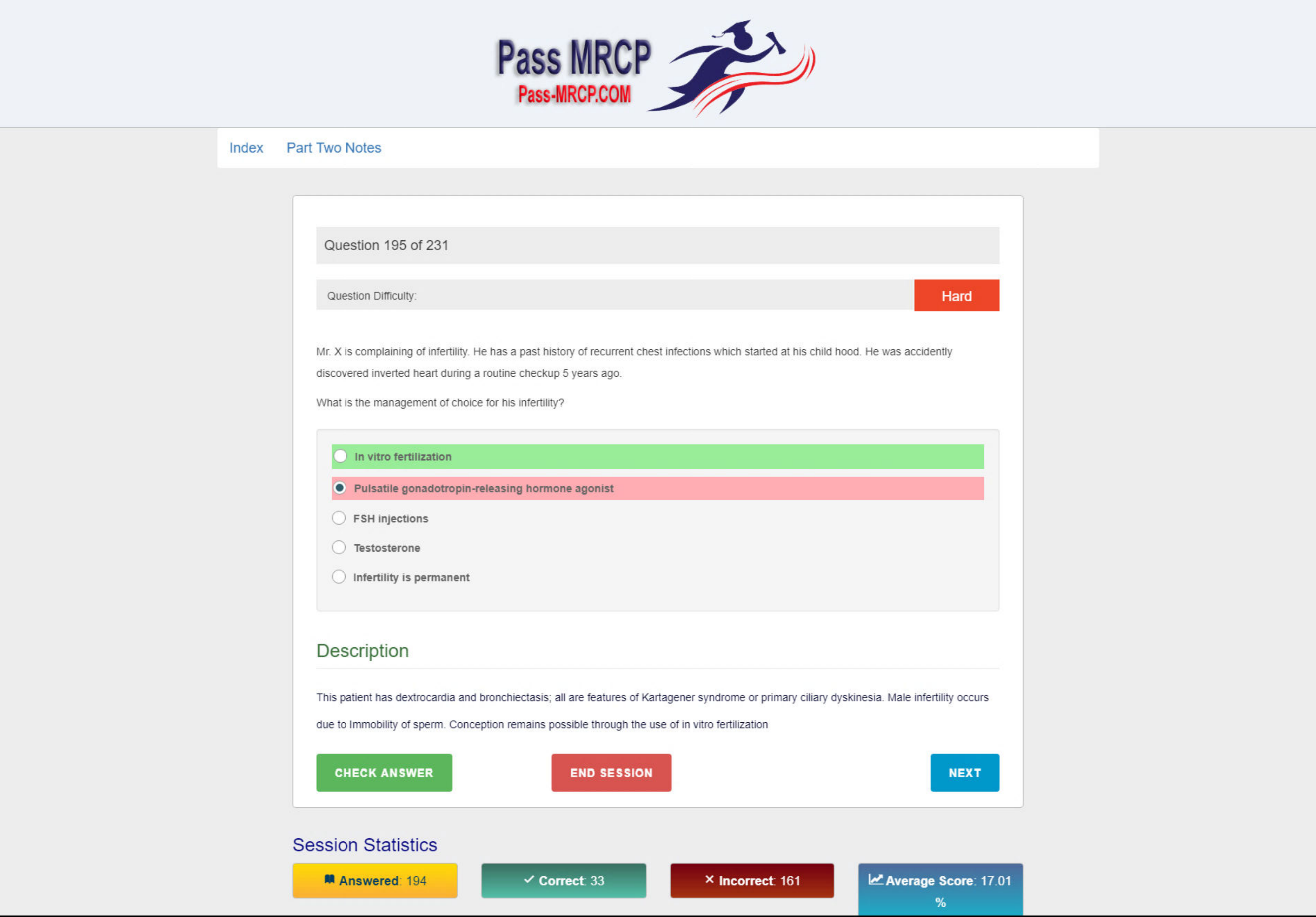
What is the most likely diagnosis?

○ **Goodpasture syndrome**
● **Microscopic polyangiitis**
○ **Tuberculosis**
○ **PAN**
○ **Wegener granulomatosis**

Description

Microscopic polyangiitis is necrotizing vasculitis of small- and medium-sized arteries and veins. It is the most common cause of pulmonary-renal syndrome. It is manifested by:

- Interstitial pneumonitis and pulmonary hemorrhage
- Pauci-immune glomerulonephritis
- Palpable purpura and cutaneous vasculitis (ulcers, splinter hemorrhages and bullous lesions)
- Mononeuritis multiplex



Question 195 of 231

Question Difficulty: Hard

Mr. X is complaining of infertility. He has a past history of recurrent chest infections which started at his child hood. He was accidently discovered inverted heart during a routine checkup 5 years ago.

What is the management of choice for his infertility?

- ○ In vitro fertilization
- ● Pulsatile gonadotropin-releasing hormone agonist
- ○ FSH injections
- ○ Testosterone
- ○ Infertility is permanent

Description

This patient has dextrocardia and bronchiectasis; all are features of Kartagener syndrome or primary ciliary dyskinesia. Male infertility occurs due to Immobility of sperm. Conception remains possible through the use of in vitro fertilization

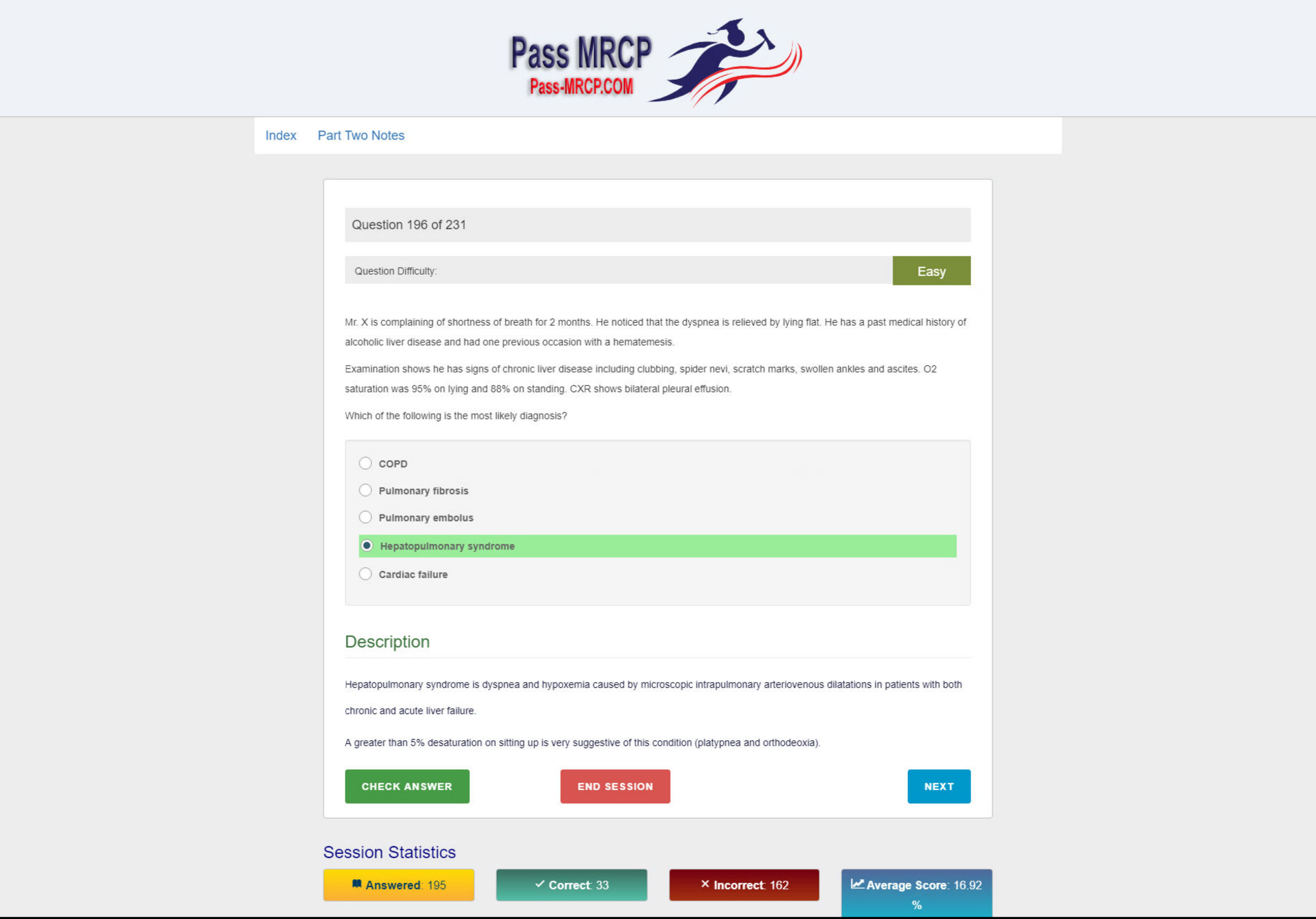
Session Statistics

Answered: 194

✓ **Correct**: 33

✕ **Incorrect**: 161

Average Score: 17.01 %



Question 196 of 231

Question Difficulty: Easy

Mr. X is complaining of shortness of breath for 2 months. He noticed that the dyspnea is relieved by lying flat. He has a past medical history of alcoholic liver disease and had one previous occasion with a hematemesis.

Examination shows he has signs of chronic liver disease including clubbing, spider nevi, scratch marks, swollen ankles and ascites. O2 saturation was 95% on lying and 88% on standing. CXR shows bilateral pleural effusion.

Which of the following is the most likely diagnosis?

○ COPD
○ Pulmonary fibrosis
○ Pulmonary embolus
● Hepatopulmonary syndrome
○ Cardiac failure

Description

Hepatopulmonary syndrome is dyspnea and hypoxemia caused by microscopic intrapulmonary arteriovenous dilatations in patients with both chronic and acute liver failure.

A greater than 5% desaturation on sitting up is very suggestive of this condition (platypnea and orthodeoxia).

Session Statistics

Answered: 195
Correct: 33
Incorrect: 162
Average Score: 16.92 %

Question 197 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the Emergency Department due to sever dyspnea. He has a history of COPD and attends the chest clinic.

Examination shows pronounced wheeze interspersed with occasional coarse crackles. Q2 saturation was 60%. Arterial blood gases show:

pH	7.31	(7.35-7.45)
PCO 2	6.7 kPa	(4.4-5.9 kPa)
PO 2	7.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	21 mmol/L	(22-28 mmol/L)

He was started on high flow oxygen, salbutamol nebulizers, antibiotics and intravenous hydrocortisone. 30minutes later he began to confuse and losing consciousness. Q2 saturation was 95%. Repeated arterial blood gases show:

pH	7.28	(7.35-7.45)
PCO 2	8.7 kPa	(4.4-5.9 kPa)
PO 2	11.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	18 mmol/L	(22-28 mmol/L)

He was started on high flow oxygen, salbutamol nebulizers, antibiotics and intravenous hydrocortisone. 30minutes later he began to confuse and losing consciousness. Q2 saturation was 95%. Repeated arterial blood gases show:

pH	7.28	(7.35-7.45)
PCO 2	8.7 kPa	(4.4-5.9 kPa)
PO 2	11.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	18 mmol/L	(22-28 mmol/L)

What is the immediate management?

- ● **Ipratropium nebulizers**
- ○ **Refer for intubation**
- ○ **Doxapram**
- ○ **Reduce oxygen aiming saturation to 88%**
- ○ **Non-invasive ventilation**

Description

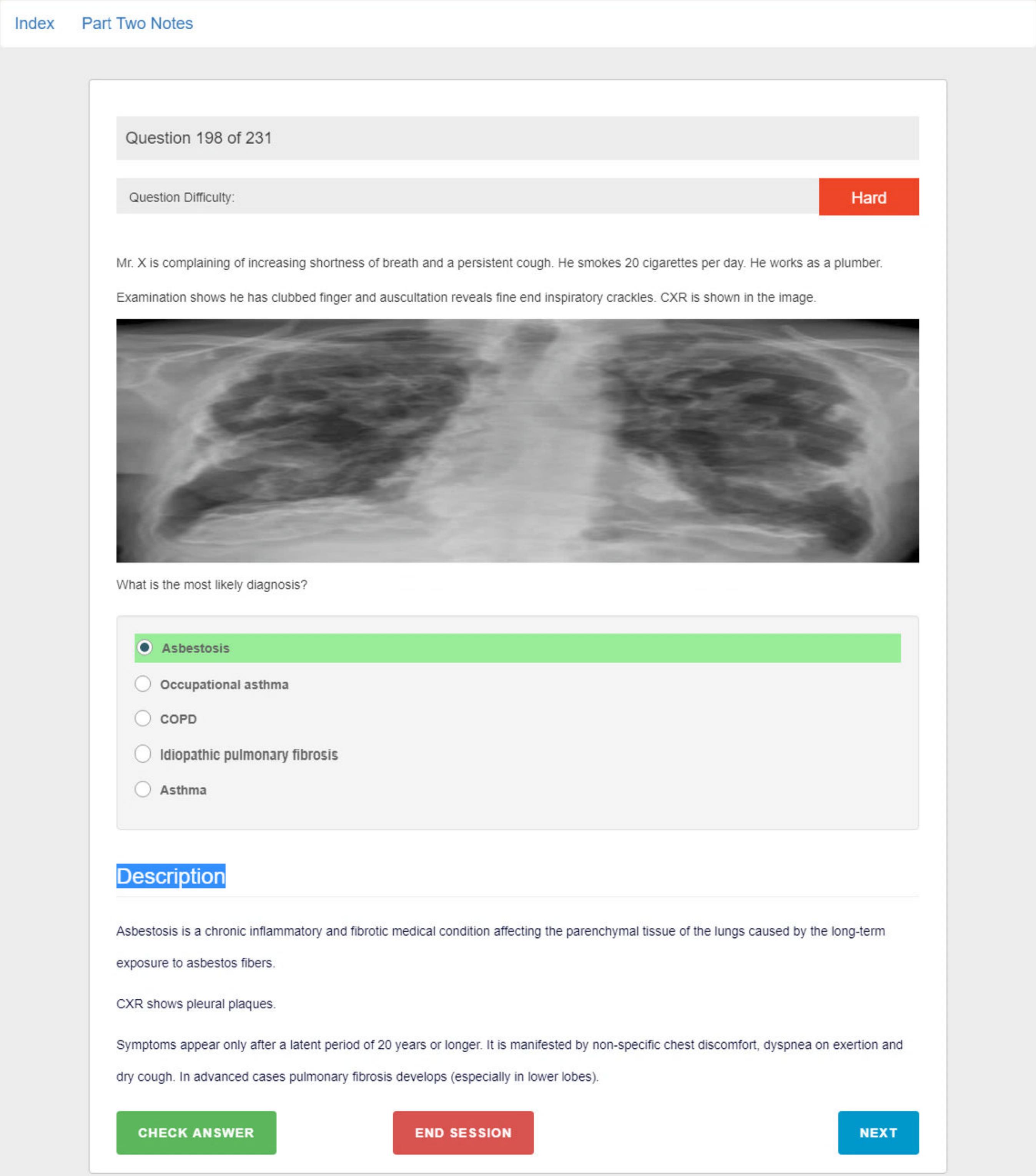
This patient is complaining acute exacerbation COPD. O2 saturation must be aimed at 88-92% as higher levels as in this case will causes loss of hypoxic drive which is mediated by carotid body which leads to hypoventilation. Once the pCO2 is back to normal the target oxygen saturations should be 94-98%.

Non-invasive ventilation (NIV) should be used as the treatment of choice for persistent hypercapnea not responding to medical therapy.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 196 ✓ **Correct**: 34 ✕ **Incorrect**: 162 **Average Score**: 17.35 %



Question 198 of 231

Question Difficulty: **Hard**

Mr. X is complaining of increasing shortness of breath and a persistent cough. He smokes 20 cigarettes per day. He works as a plumber.

Examination shows he has clubbed finger and auscultation reveals fine end inspiratory crackles. CXR is shown in the image.

What is the most likely diagnosis?

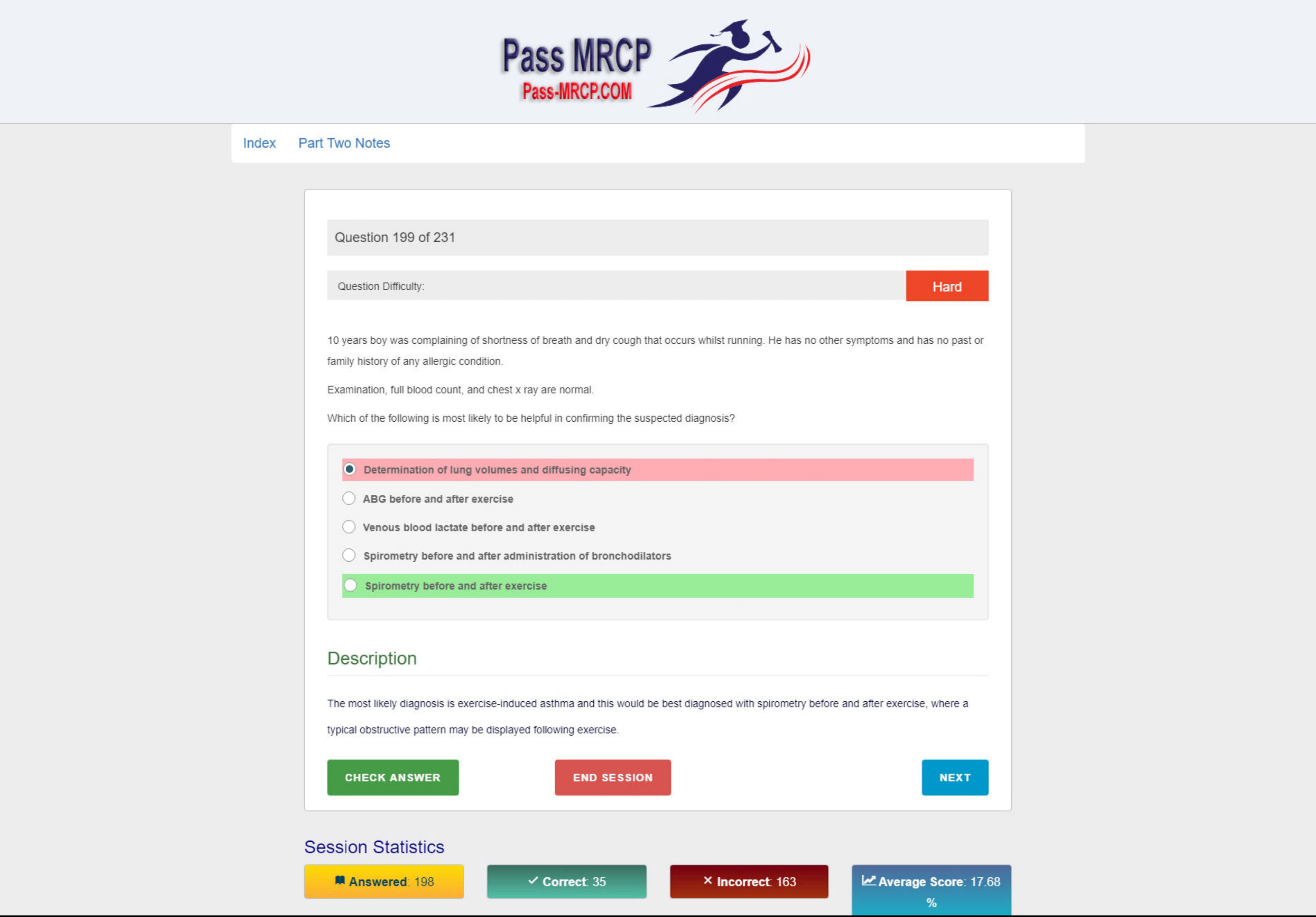
- ● **Asbestosis**
- ○ **Occupational asthma**
- ○ **COPD**
- ○ **Idiopathic pulmonary fibrosis**
- ○ **Asthma**

Description

Asbestosis is a chronic inflammatory and fibrotic medical condition affecting the parenchymal tissue of the lungs caused by the long-term exposure to asbestos fibers.

CXR shows pleural plaques.

Symptoms appear only after a latent period of 20 years or longer. It is manifested by non-specific chest discomfort, dyspnea on exertion and dry cough. In advanced cases pulmonary fibrosis develops (especially in lower lobes).



Question 199 of 231

Question Difficulty: **Hard**

10 years boy was complaining of shortness of breath and dry cough that occurs whilst running. He has no other symptoms and has no past or family history of any allergic condition.

Examination, full blood count, and chest x ray are normal.

Which of the following is most likely to be helpful in confirming the suspected diagnosis?

- ● **Determination of lung volumes and diffusing capacity**
- ○ **ABG before and after exercise**
- ○ **Venous blood lactate before and after exercise**
- ○ **Spirometry before and after administration of bronchodilators**
- ○ **Spirometry before and after exercise**

Description

The most likely diagnosis is exercise-induced asthma and this would be best diagnosed with spirometry before and after exercise, where a typical obstructive pattern may be displayed following exercise.

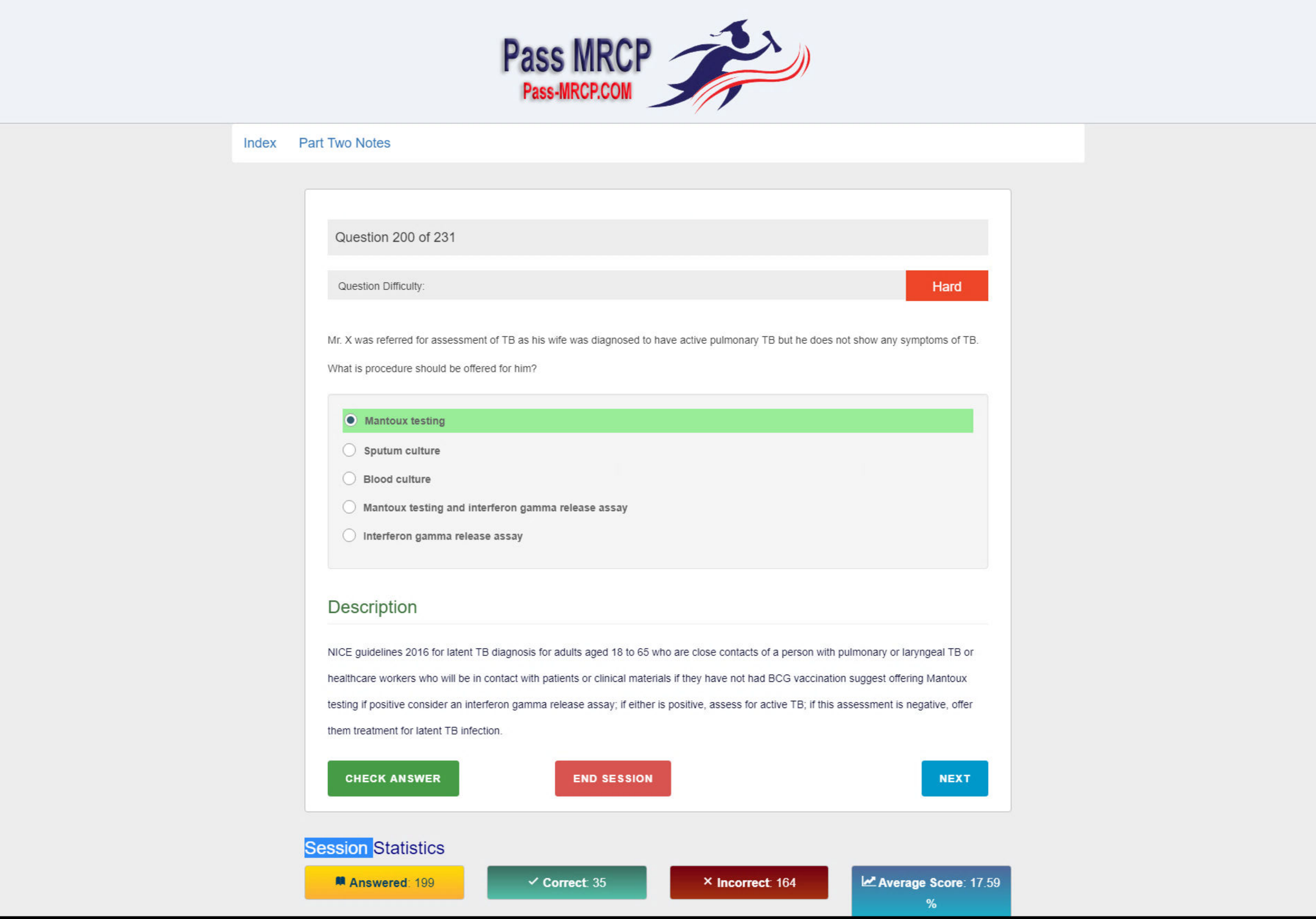
Session Statistics

Answered: 198

✓ **Correct**: 35

× **Incorrect**: 163

Average Score: 17.68 %



Question 200 of 231

Question Difficulty: Hard

Mr. X was referred for assessment of TB as his wife was diagnosed to have active pulmonary TB but he does not show any symptoms of TB.

What is procedure should be offered for him?

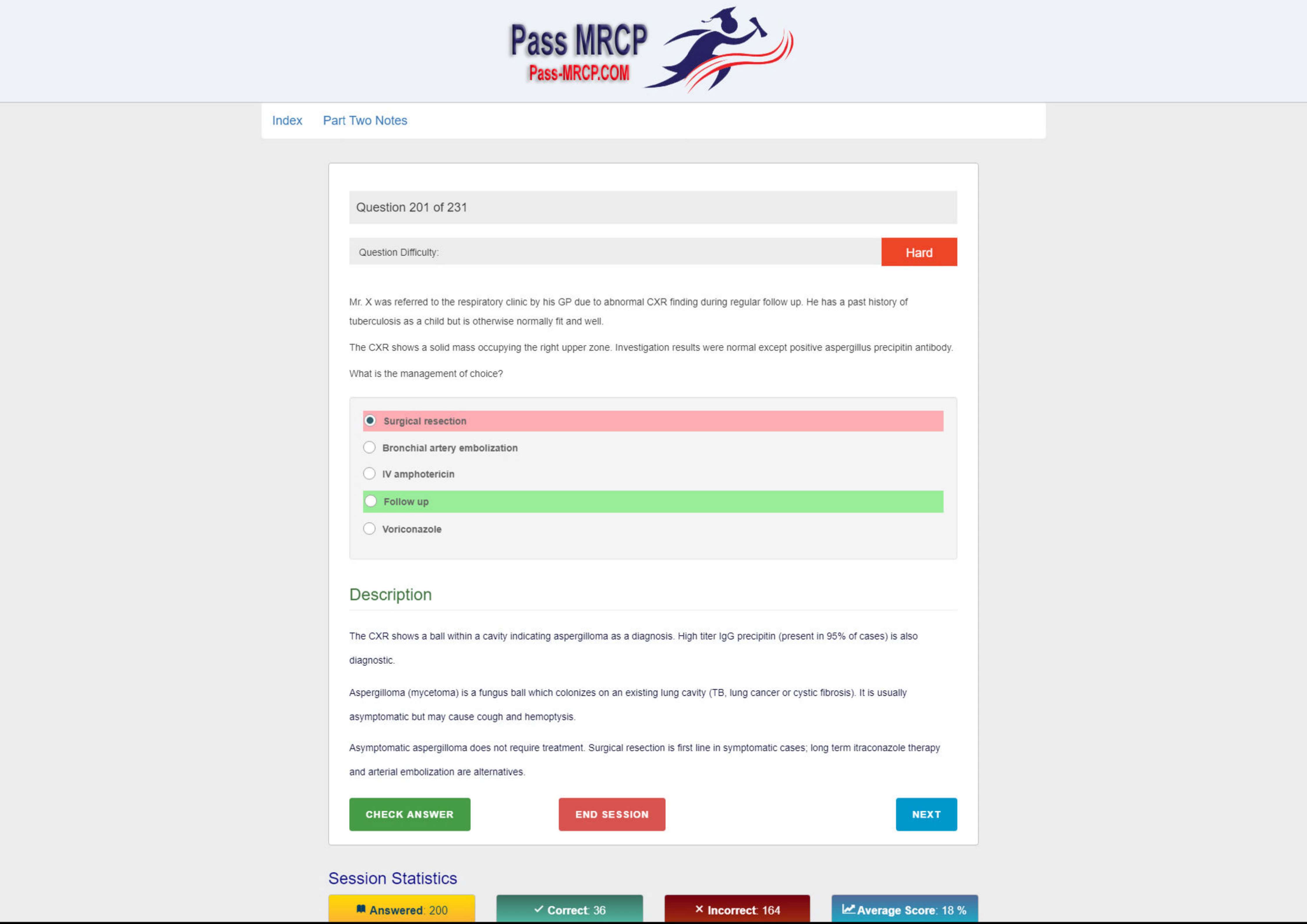
● **Mantoux testing**
○ **Sputum culture**
○ **Blood culture**
○ **Mantoux testing and interferon gamma release assay**
○ **Interferon gamma release assay**

Description

NICE guidelines 2016 for latent TB diagnosis for adults aged 18 to 65 who are close contacts of a person with pulmonary or laryngeal TB or healthcare workers who will be in contact with patients or clinical materials if they have not had BCG vaccination suggest offering Mantoux testing if positive consider an interferon gamma release assay; if either is positive, assess for active TB; if this assessment is negative, offer them treatment for latent TB infection.

Session Statistics

Answered: 199
✓ **Correct**: 35
✕ **Incorrect**: 164
Average Score: 17.59 %



Question 201 of 231

Question Difficulty: **Hard**

Mr. X was referred to the respiratory clinic by his GP due to abnormal CXR finding during regular follow up. He has a past history of tuberculosis as a child but is otherwise normally fit and well.

The CXR shows a solid mass occupying the right upper zone. Investigation results were normal except positive aspergillus precipitin antibody.

What is the management of choice?

- ● **Surgical resection**
- ○ **Bronchial artery embolization**
- ○ **IV amphotericin**
- ○ **Follow up**
- ○ **Voriconazole**

Description

The CXR shows a ball within a cavity indicating aspergilloma as a diagnosis. High titer IgG precipitin (present in 95% of cases) is also diagnostic.

Aspergilloma (mycetoma) is a fungus ball which colonizes on an existing lung cavity (TB, lung cancer or cystic fibrosis). It is usually asymptomatic but may cause cough and hemoptysis.

Asymptomatic aspergilloma does not require treatment. Surgical resection is first line in symptomatic cases; long term itraconazole therapy and arterial embolization are alternatives.

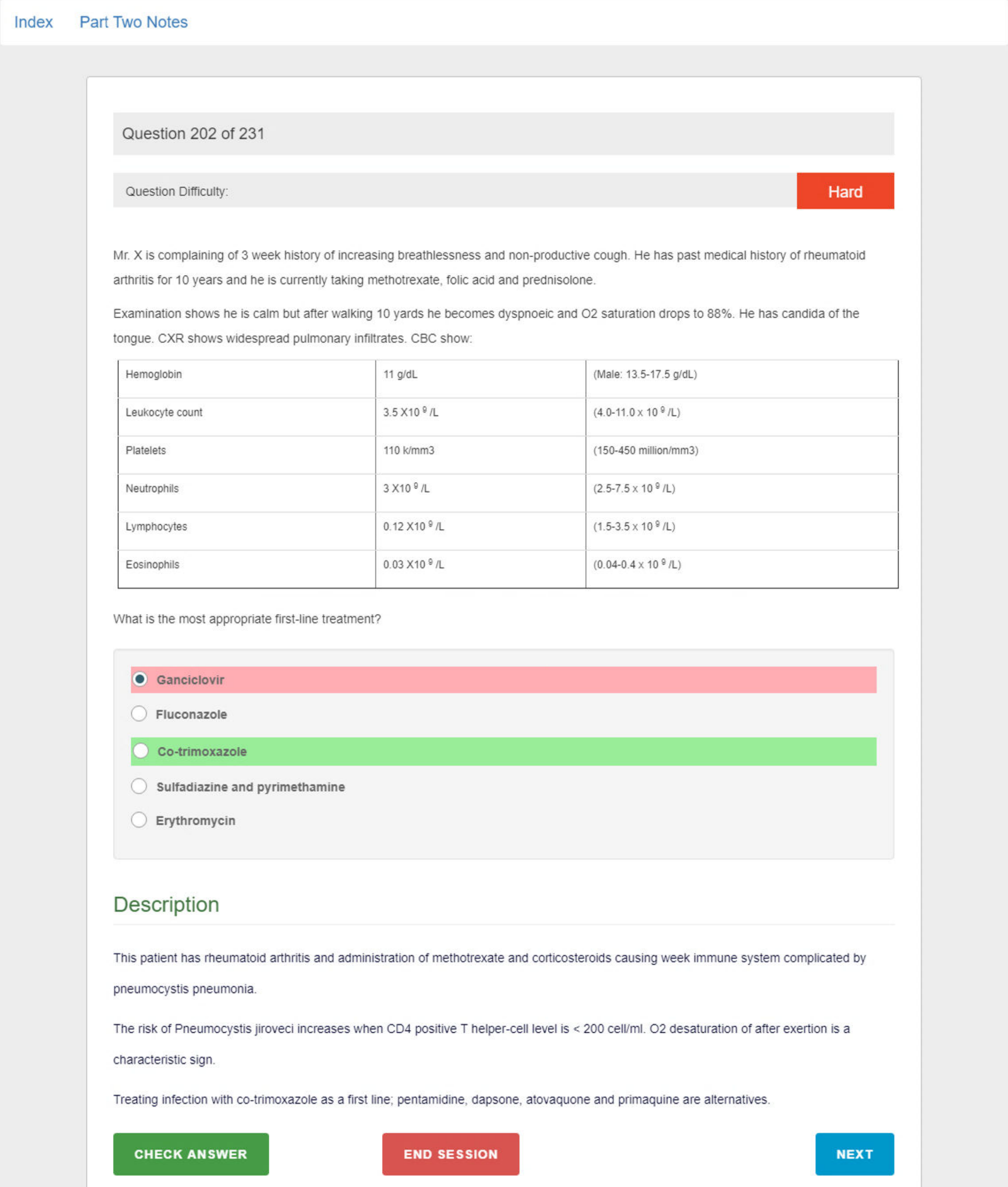
Session Statistics

Answered: 200

✓ Correct: 36

✕ Incorrect: 164

Average Score: 18 %



Question 202 of 231

Question Difficulty: Hard

Mr. X is complaining of 3 week history of increasing breathlessness and non-productive cough. He has past medical history of rheumatoid arthritis for 10 years and he is currently taking methotrexate, folic acid and prednisolone.

Examination shows he is calm but after walking 10 yards he becomes dyspnoeic and O2 saturation drops to 88%. He has candida of the tongue. CXR shows widespread pulmonary infiltrates. CBC show:

Hemoglobin	11 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	3.5 X10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	110 k/mm3	(150-450 million/mm3)
Neutrophils	3 X10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	0.12 X10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.03 X10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)

What is the most appropriate first-line treatment?

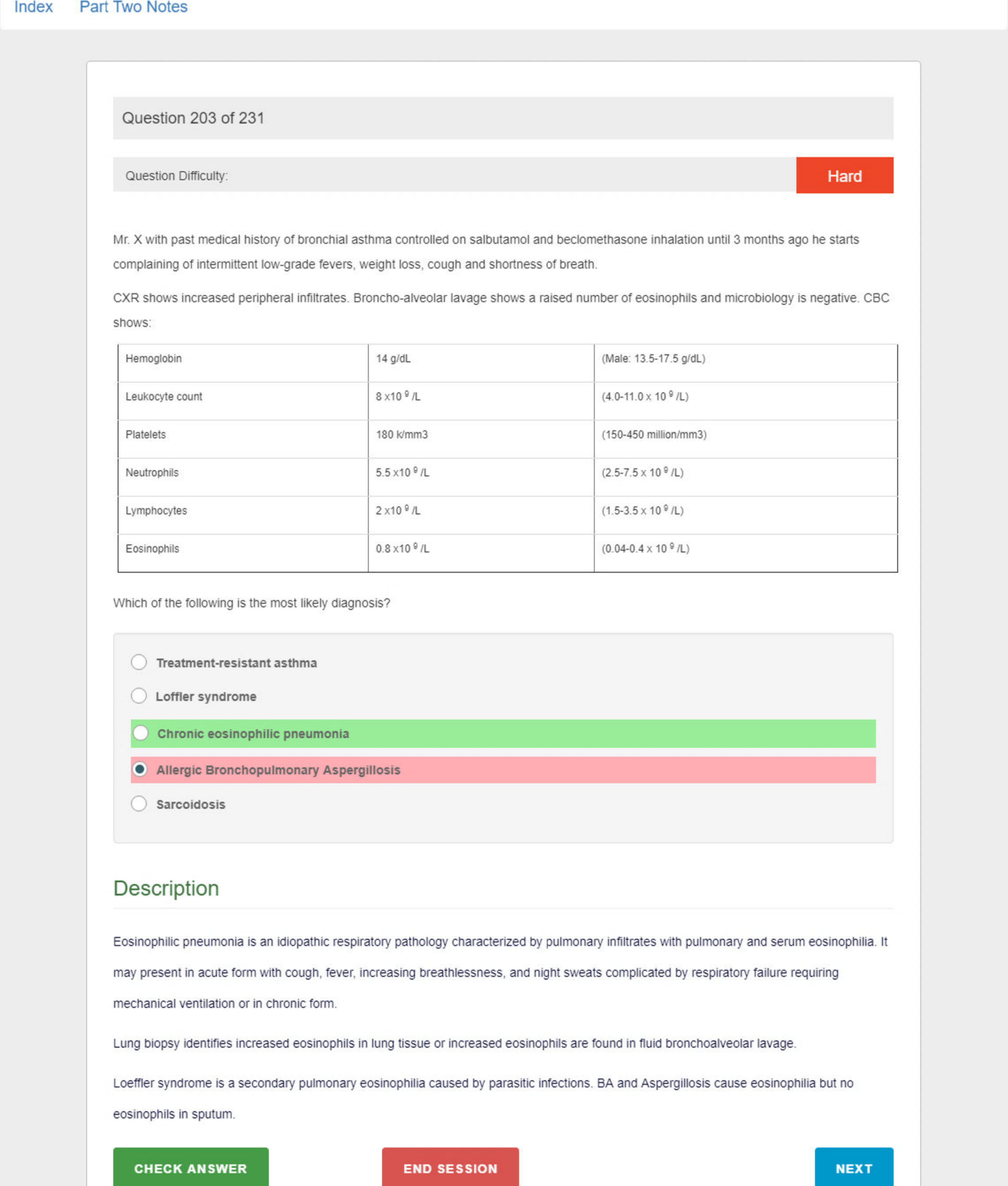
- ● **Ganciclovir**
- ○ **Fluconazole**
- ○ **Co-trimoxazole**
- ○ **Sulfadiazine and pyrimethamine**
- ○ **Erythromycin**

Description

This patient has rheumatoid arthritis and administration of methotrexate and corticosteroids causing week immune system complicated by pneumocystis pneumonia.

The risk of Pneumocystis jiroveci increases when CD4 positive T helper-cell level is < 200 cell/ml. O2 desaturation of after exertion is a characteristic sign.

Treating infection with co-trimoxazole as a first line; pentamidine, dapsone, atovaquone and primaquine are alternatives.



Question 203 of 231

Question Difficulty:

Mr. X with past medical history of bronchial asthma controlled on salbutamol and beclomethasone inhalation until 3 months ago he starts complaining of intermittent low-grade fevers, weight loss, cough and shortness of breath.

CXR shows increased peripheral infiltrates. Broncho-alveolar lavage shows a raised number of eosinophils and microbiology is negative. CBC shows:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 k/mm3	(150-450 million/mm3)
Neutrophils	5.5 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	2 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.8 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)

Which of the following is the most likely diagnosis?

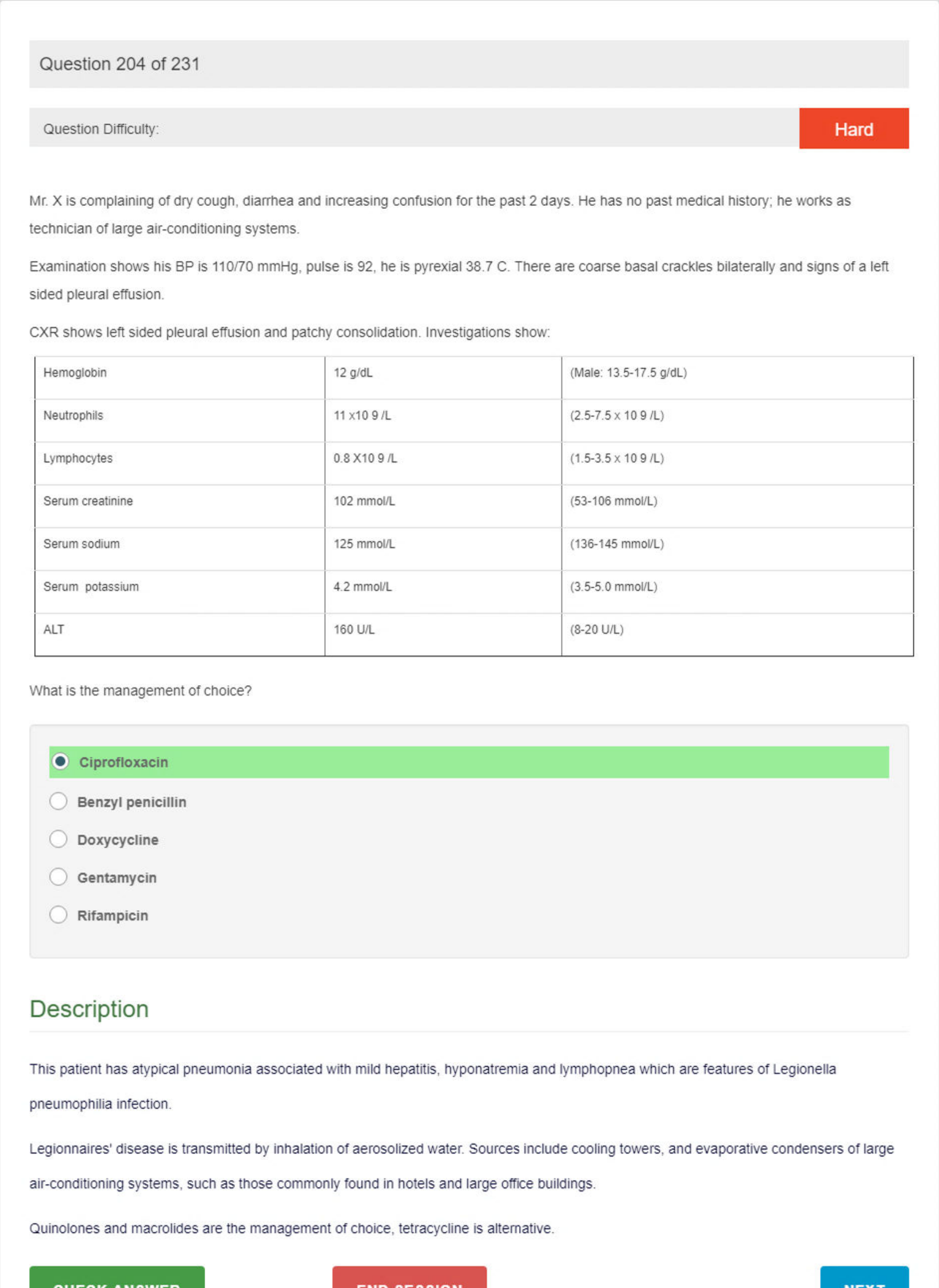
- ○ **Treatment-resistant asthma**
- ○ **Loffler syndrome**
- ○ **Chronic eosinophilic pneumonia**
- ● **Allergic Bronchopulmonary Aspergillosis**
- ○ **Sarcoidosis**

Description

Eosinophilic pneumonia is an idiopathic respiratory pathology characterized by pulmonary infiltrates with pulmonary and serum eosinophilia. It may present in acute form with cough, fever, increasing breathlessness, and night sweats complicated by respiratory failure requiring mechanical ventilation or in chronic form.

Lung biopsy identifies increased eosinophils in lung tissue or increased eosinophils are found in fluid bronchoalveolar lavage.

Loeffler syndrome is a secondary pulmonary eosinophilia caused by parasitic infections. BA and Aspergillosis cause eosinophilia but no eosinophils in sputum.



Question 204 of 231

Question Difficulty: **Hard**

Mr. X is complaining of dry cough, diarrhea and increasing confusion for the past 2 days. He has no past medical history; he works as technician of large air-conditioning systems.

Examination shows his BP is 110/70 mmHg, pulse is 92, he is pyrexial 38.7 C. There are coarse basal crackles bilaterally and signs of a left sided pleural effusion.

CXR shows left sided pleural effusion and patchy consolidation. Investigations show:

Hemoglobin	12 g/dL	(Male: 13.5-17.5 g/dL)
Neutrophils	11 x10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.8 X10 9 /L	(1.5-3.5 x 10 9 /L)
Serum creatinine	102 mmol/L	(53-106 mmol/L)
Serum sodium	125 mmol/L	(136-145 mmol/L)
Serum potassium	4.2 mmol/L	(3.5-5.0 mmol/L)
ALT	160 U/L	(8-20 U/L)

What is the management of choice?

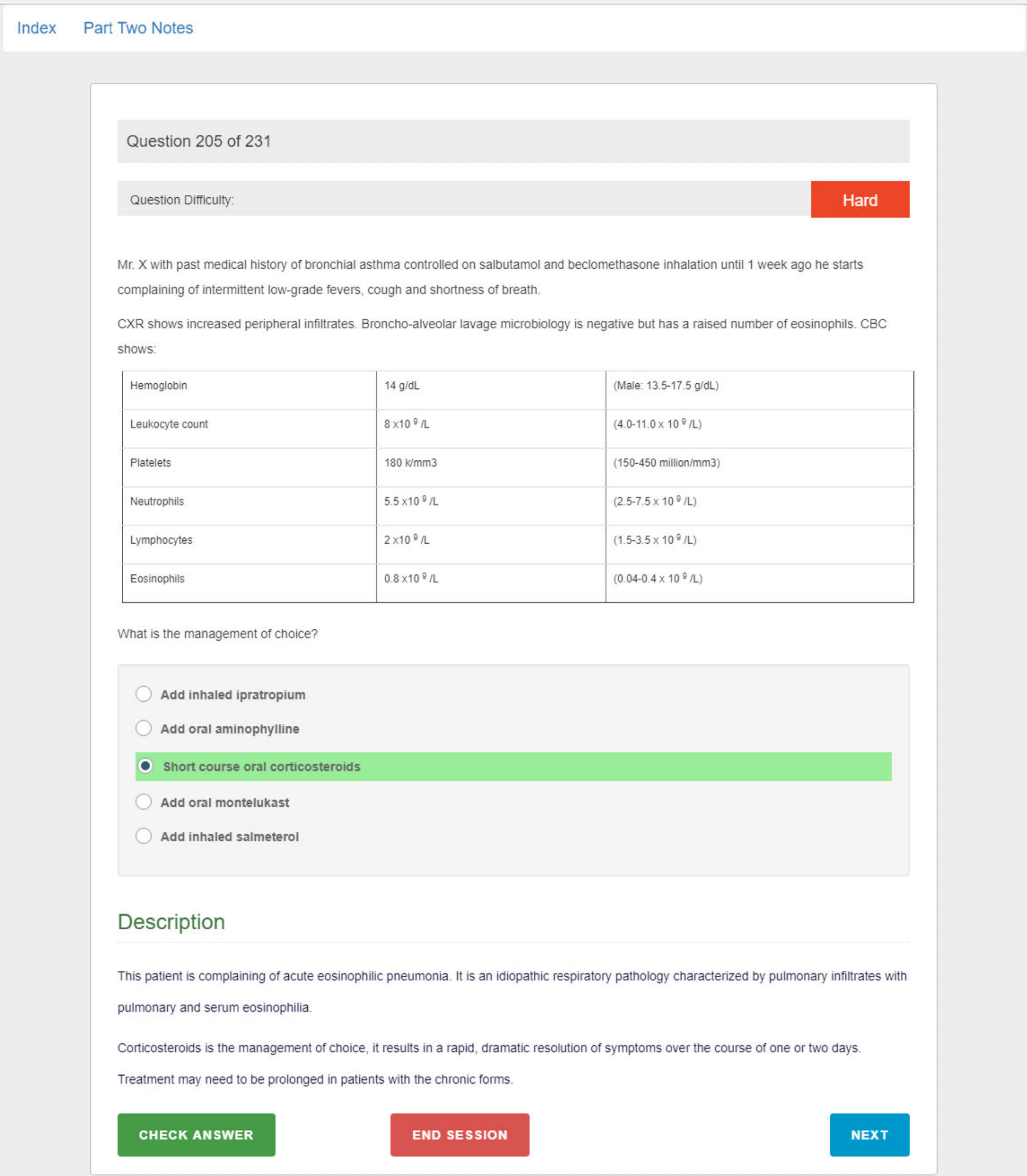
- ● **Ciprofloxacin**
- ○ **Benzyl penicillin**
- ○ **Doxycycline**
- ○ **Gentamycin**
- ○ **Rifampicin**

Description

This patient has atypical pneumonia associated with mild hepatitis, hyponatremia and lymphopnea which are features of Legionella pneumophilia infection.

Legionnaires' disease is transmitted by inhalation of aerosolized water. Sources include cooling towers, and evaporative condensers of large air-conditioning systems, such as those commonly found in hotels and large office buildings.

Quinolones and macrolides are the management of choice, tetracycline is alternative.



Question 205 of 231

Mr. X with past medical history of bronchial asthma controlled on salbutamol and beclomethasone inhalation until 1 week ago he starts complaining of intermittent low-grade fevers, cough and shortness of breath.

CXR shows increased peripheral infiltrates. Broncho-alveolar lavage microbiology is negative but has a raised number of eosinophils. CBC shows:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 x10^9/L	(4.0-11.0 x 10^9/L)
Platelets	180 k/mm3	(150-450 million/mm3)
Neutrophils	5.5 x10^9/L	(2.5-7.5 x 10^9/L)
Lymphocytes	2 x10^9/L	(1.5-3.5 x 10^9/L)
Eosinophils	0.8 x10^9/L	(0.04-0.4 x 10^9/L)

What is the management of choice?

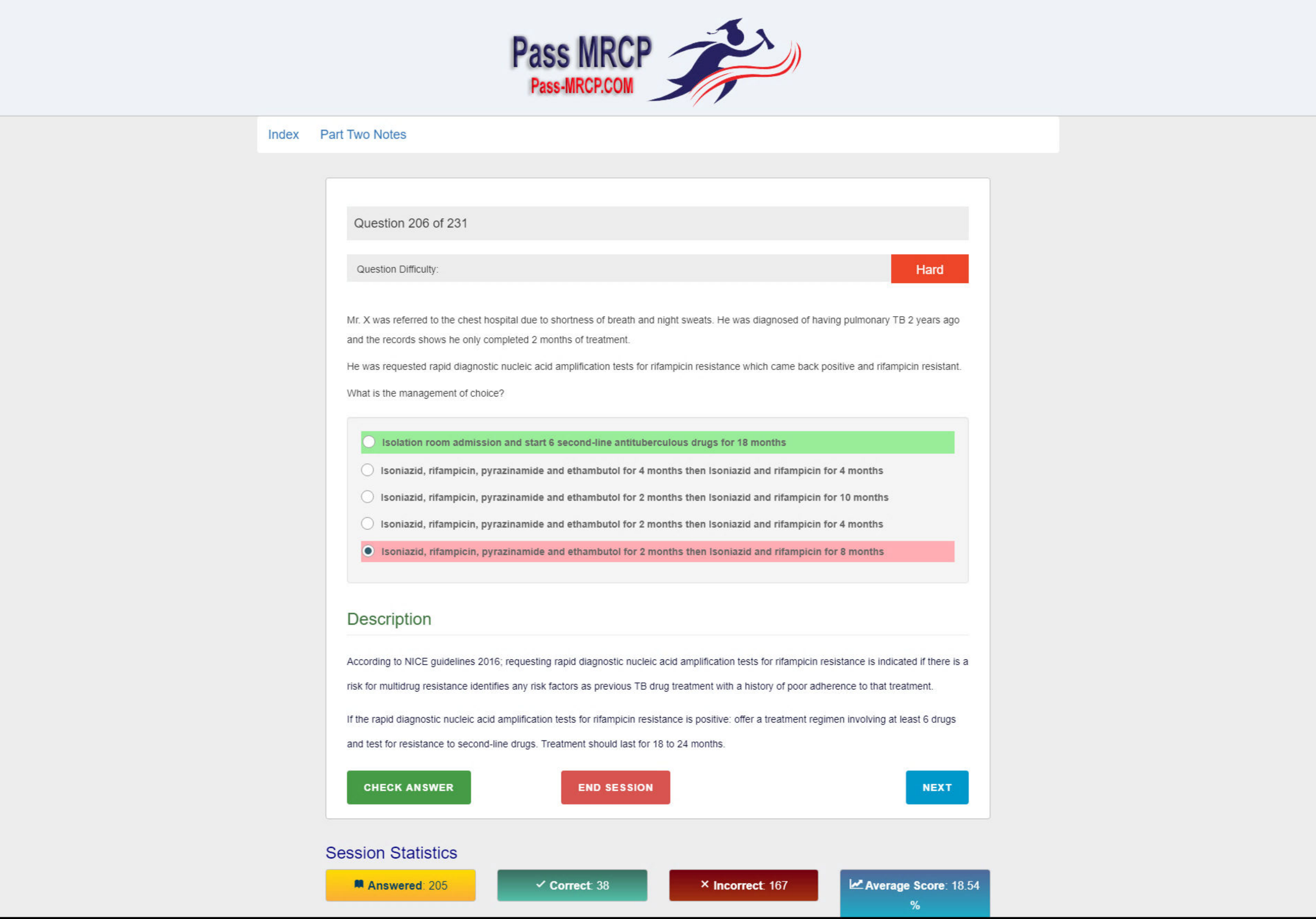
- ○ **Add inhaled ipratropium**
- ○ **Add oral aminophylline**
- ● **Short course oral corticosteroids**
- ○ **Add oral montelukast**
- ○ **Add inhaled salmeterol**

Description

This patient is complaining of acute eosinophilic pneumonia. It is an idiopathic respiratory pathology characterized by pulmonary infiltrates with pulmonary and serum eosinophilia.

Corticosteroids is the management of choice, it results in a rapid, dramatic resolution of symptoms over the course of one or two days.

Treatment may need to be prolonged in patients with the chronic forms.



Question 206 of 231

Question Difficulty: **Hard**

Mr. X was referred to the chest hospital due to shortness of breath and night sweats. He was diagnosed of having pulmonary TB 2 years ago and the records shows he only completed 2 months of treatment.

He was requested rapid diagnostic nucleic acid amplification tests for rifampicin resistance which came back positive and rifampicin resistant.

What is the management of choice?

- ○ **Isolation room admission and start 6 second-line antituberculous drugs for 18 months**
- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 4 months then Isoniazid and rifampicin for 4 months**
- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 10 months**
- ○ **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 4 months**
- ● **Isoniazid, rifampicin, pyrazinamide and ethambutol for 2 months then Isoniazid and rifampicin for 8 months**

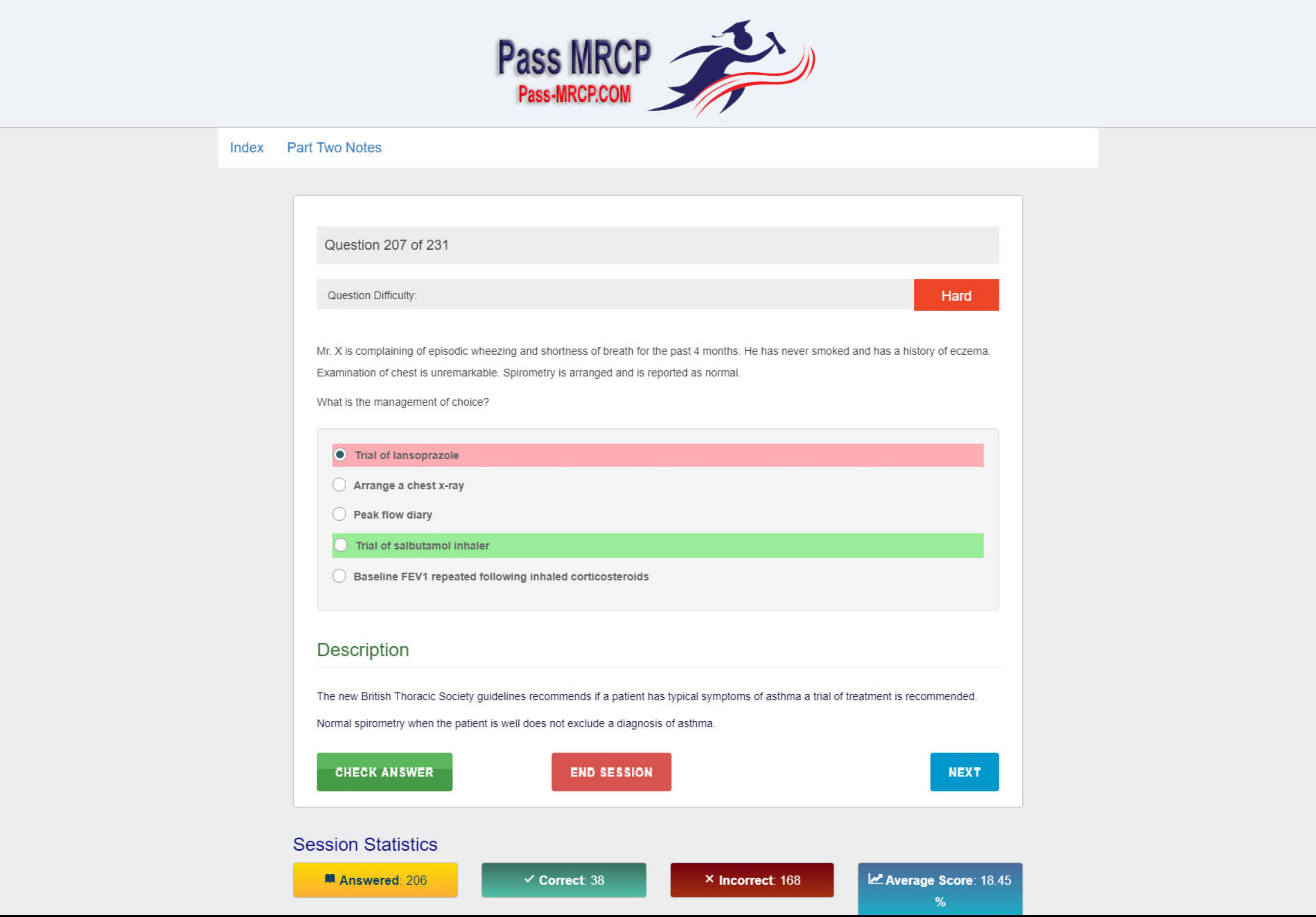
Description

According to NICE guidelines 2016; requesting rapid diagnostic nucleic acid amplification tests for rifampicin resistance is indicated if there is a risk for multidrug resistance identifies any risk factors as previous TB drug treatment with a history of poor adherence to that treatment.

If the rapid diagnostic nucleic acid amplification tests for rifampicin resistance is positive: offer a treatment regimen involving at least 6 drugs and test for resistance to second-line drugs. Treatment should last for 18 to 24 months.

Session Statistics

Answered: 205
✓ **Correct**: 38
✕ **Incorrect**: 167
Average Score: 18.54 %



Question 207 of 231

Question Difficulty: Hard

Mr. X is complaining of episodic wheezing and shortness of breath for the past 4 months. He has never smoked and has a history of eczema. Examination of chest is unremarkable. Spirometry is arranged and is reported as normal.

What is the management of choice?

- ● Trial of lansoprazole
- ○ Arrange a chest x-ray
- ○ Peak flow diary
- ○ Trial of salbutamol inhaler
- ○ Baseline FEV1 repeated following inhaled corticosteroids

Description

The new British Thoracic Society guidelines recommends if a patient has typical symptoms of asthma a trial of treatment is recommended.

Normal spirometry when the patient is well does not exclude a diagnosis of asthma.

Session Statistics

Answered: 206
Correct: 38
Incorrect: 168
Average Score: 18.45 %

Question 208 of 231

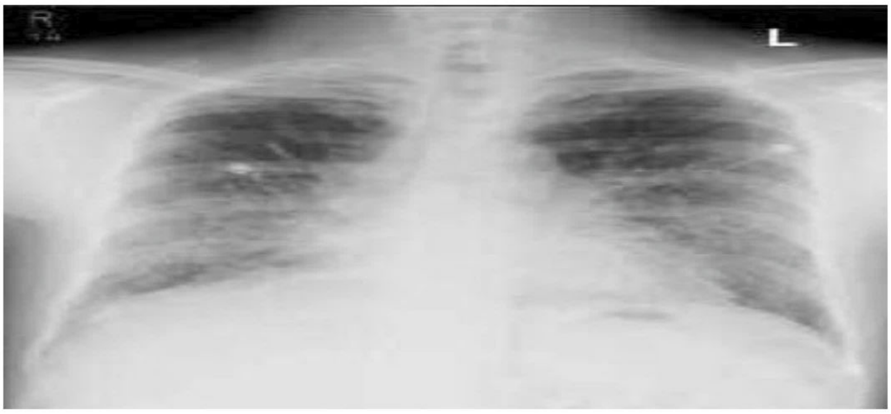
Question Difficulty: **Hard**

Mr. X is suffering from 2-month history of cough, hemoptysis and breathlessness. He has also noted a drop of urine output and frothy urine for 10 days.

Examination reveals he has bilateral basal crepitations. His CXR is shown in the image. Investigations show:

Hemoglobin	10 g/dL	(Male: 13.5-17.5 g/dL)
Serum creatinine	155 mmol/L	(53-106 mmol/L)
Serum sodium	136 mmol/L	(136-145 mmol/L)
Serum potassium	4.5 mmol/L	(3.5-5.0 mmol/L)
Serum calcium	2.2 mmol/L	(2.1-2.8 mmol/L)
Serum cholesterol	5.6 mmol/L	(< 5.2 mmol/L)
Serum triglyceride	13.2 mmol/L	(5.5-8.3 mmol/L)
24 urine	2.2 gm protein	

Pulmonary function testing shows elevated DLCO. Lung biopsy shows hemosiderin-laden macrophages and linear staining of IgG along the alveolar capillary basement membranes.



What is investigation should be asked for confirming diagnosis?

○ **High-resolution computed tomography (CT) of the thorax**

● **Antineutrophil cytoplasmic antibody**

○ **Ultrasound scan of renal tract**

○ **Antiglomerular basement membrane antibody**

○ **Fibreoptic bronchoscopy**

Description

This patient has Goodpasture syndrome. It is diffuse pulmonary hemorrhage and acute or rapidly progressive glomerulonephritis due to the presence of circulating anti-glomerular basement membrane (anti-GBM) antibodies which are directed against type-IV collagen.

Serologic assay for anti-GBM antibodies is diagnostic. Lung biopsy excludes granulomatous inflammation as a diagnosis so ANCA is not indicated.

CXR shows bilateral patchy, perihilar and bibasilar parenchymal consolidations unlike Wegener granulomatosis which is manifested by cavitating lesions.

CHECK ANSWER END SESSION NEXT

Session Statistics

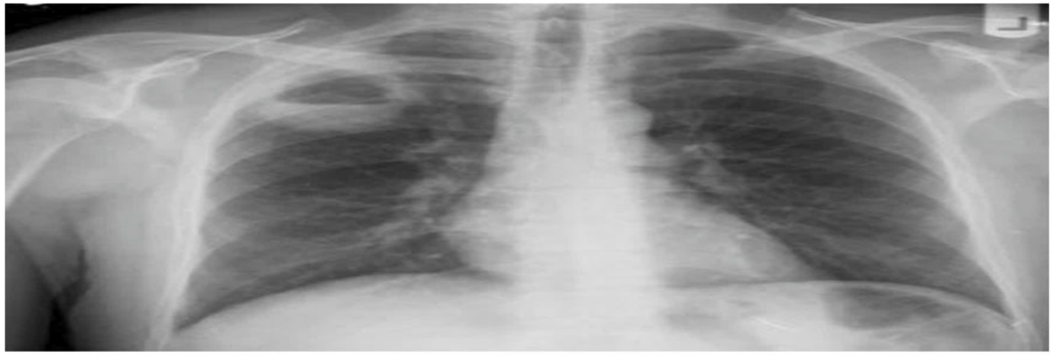
Answered: 207 ✓ **Correct**: 38 ✕ **Incorrect**: 169 **Average Score**: 18.36 %

Question 209 of 231

Question Difficulty: **Hard**

Mr. X was admitted to the ED complaining of confusion, fever and shortness of breath. He also reports productive cough of purulent and blood-stained sputum. He has a long history of multiple sclerosis and swallowing problems.

Examination reveals he is pyrexial at 38.6 C, BP of 100/60 mmhg, heart rate of 110/min and respiratory of 25/min. Auscultation of the chest reveals right-sided consolidation and CXR was shown in the image



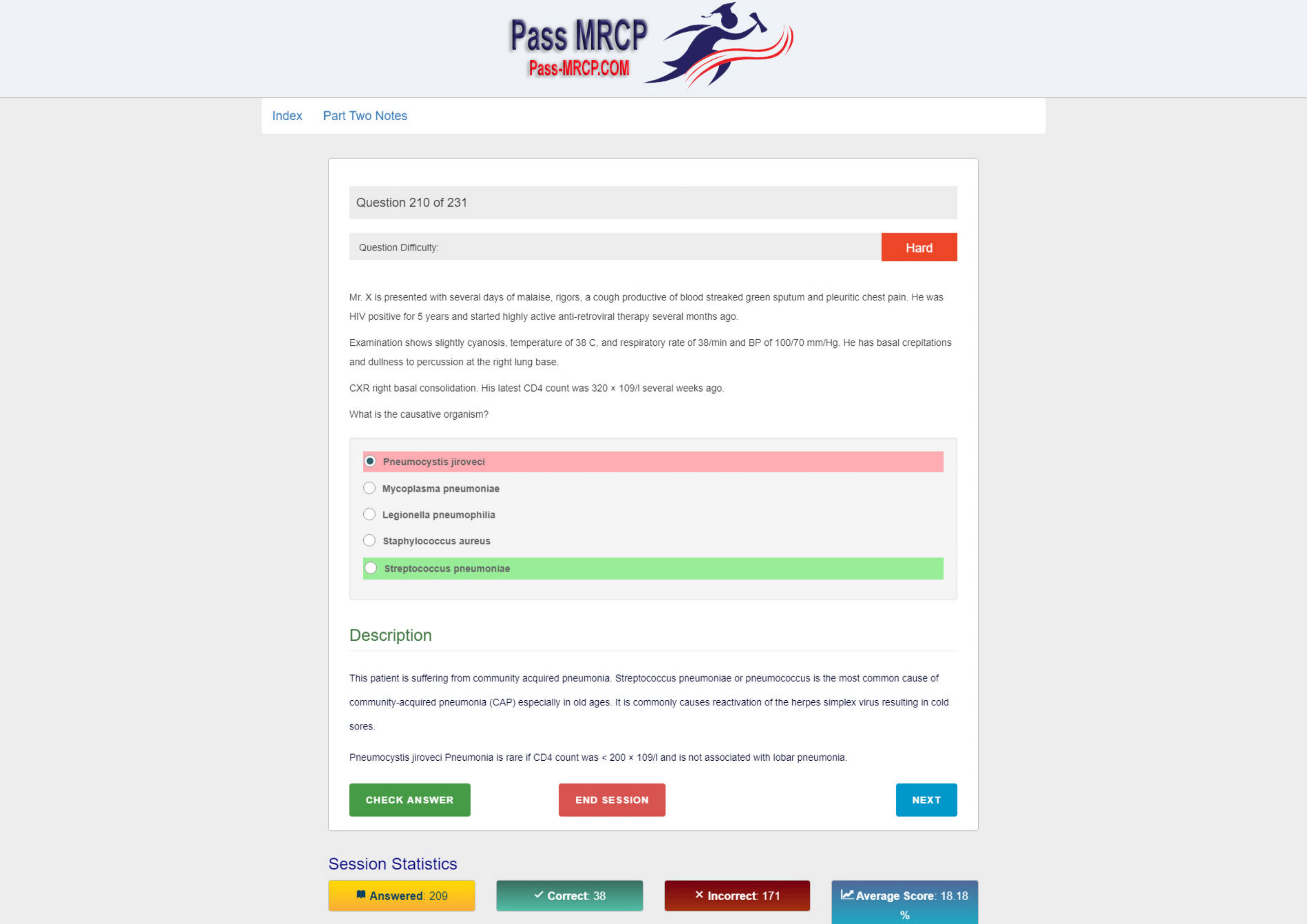
What is the most likely diagnosis?

- ○ **Adenocarcinoma**
- ○ **Tuberculosis**
- ● **Sarcoidosis**
- ○ **Kaplan syndrome**
- ○ **Lung abscess**

Description

The CXR shows consolidation with air fluid level indicating lung abscess as a diagnosis. Lung abscess is a type of liquefactive necrosis of the pulmonary tissue and formation of cavities. Alcoholism and aspiration are the most common condition predisposing to lung abscesses.

CHECK ANSWER END SESSION NEXT



Question 210 of 231

Question Difficulty: Hard

Mr. X is presented with several days of malaise, rigors, a cough productive of blood streaked green sputum and pleuritic chest pain. He was HIV positive for 5 years and started highly active anti-retroviral therapy several months ago.

Examination shows slightly cyanosis, temperature of 38 C, and respiratory rate of 38/min and BP of 100/70 mm/Hg. He has basal crepitations and dullness to percussion at the right lung base.

CXR right basal consolidation. His latest CD4 count was 320 × 109/l several weeks ago.

What is the causative organism?

● **Pneumocystis jiroveci**

○ **Mycoplasma pneumoniae**

○ **Legionella pneumophilia**

○ **Staphylococcus aureus**

○ **Streptococcus pneumoniae**

Description

This patient is suffering from community acquired pneumonia. Streptococcus pneumoniae or pneumococcus is the most common cause of community-acquired pneumonia (CAP) especially in old ages. It is commonly causes reactivation of the herpes simplex virus resulting in cold sores.

Pneumocystis jiroveci Pneumonia is rare if CD4 count was < 200 × 109/l and is not associated with lobar pneumonia.

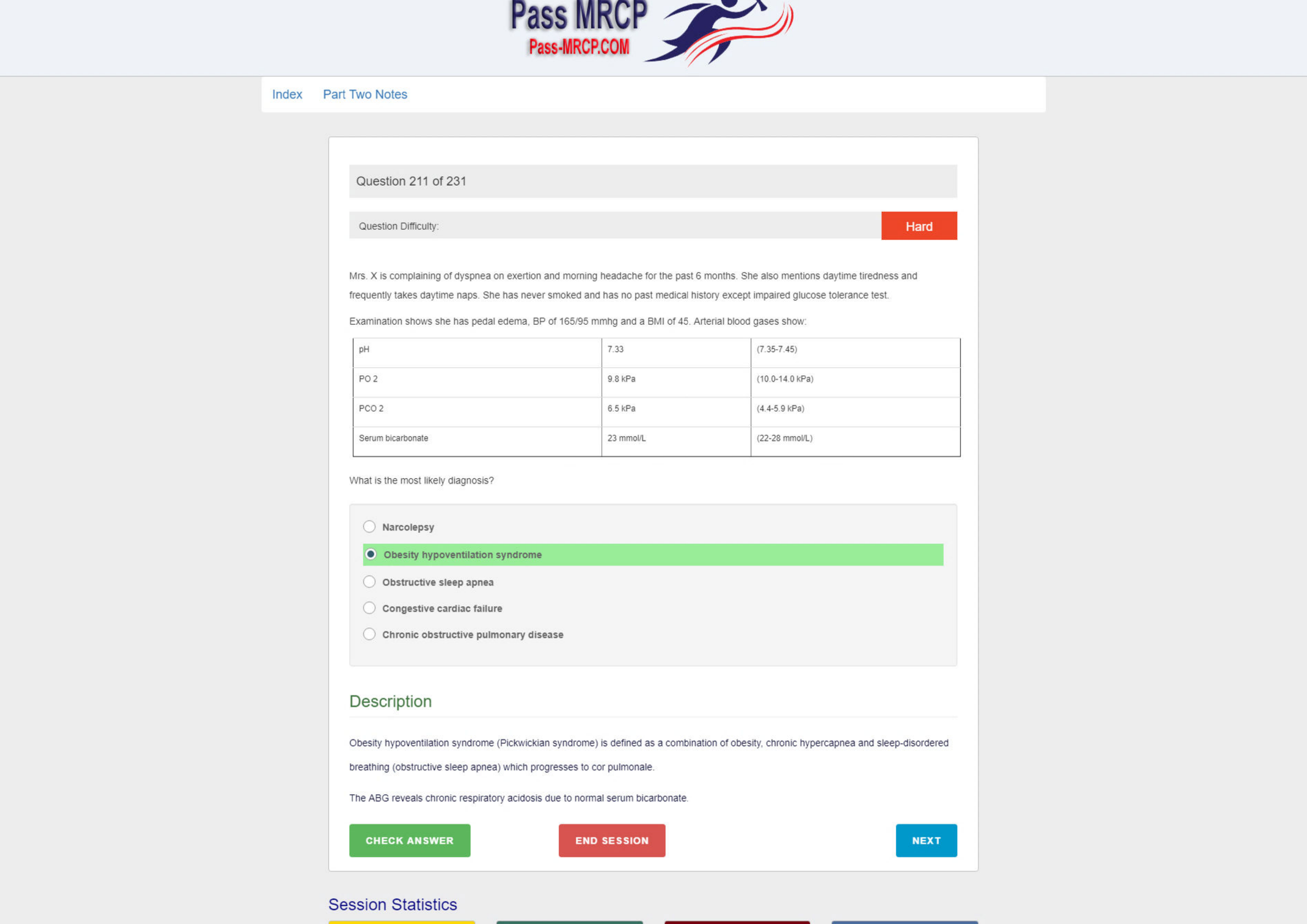
Session Statistics

Answered: 209

✓ **Correct**: 38

✕ **Incorrect**: 171

Average Score: 18.18 %



Question 211 of 231

Question Difficulty: **Hard**

Mrs. X is complaining of dyspnea on exertion and morning headache for the past 6 months. She also mentions daytime tiredness and frequently takes daytime naps. She has never smoked and has no past medical history except impaired glucose tolerance test.

Examination shows she has pedal edema, BP of 165/95 mmhg and a BMI of 45. Arterial blood gases show:

pH	7.33	(7.35-7.45)
PO 2	9.8 kPa	(10.0-14.0 kPa)
PCO 2	6.5 kPa	(4.4-5.9 kPa)
Serum bicarbonate	23 mmol/L	(22-28 mmol/L)

What is the most likely diagnosis?

- ○ **Narcolepsy**
- ● **Obesity hypoventilation syndrome**
- ○ **Obstructive sleep apnea**
- ○ **Congestive cardiac failure**
- ○ **Chronic obstructive pulmonary disease**

Description

Obesity hypoventilation syndrome (Pickwickian syndrome) is defined as a combination of obesity, chronic hypercapnea and sleep-disordered breathing (obstructive sleep apnea) which progresses to cor pulmonale.

The ABG reveals chronic respiratory acidosis due to normal serum bicarbonate.

Session Statistics

Question 212 of 231

Question Difficulty: **Hard**

Mr. X is complaining of 3 months history of persistent cough with blood stained mucus, fever, night sweats and weight loss. Auscultation of the chest reveals widespread crackles and wheeze.

CXR shows right sided pleural effusion and apical cavitating lesion. Thoracentesis shows bloody fluid. Sputum sample was negative for tuberculosis.

A pleural fluid sample was sent for analysis. The results show:

Pleural fluid WBCs	2100 CM3, 90% lymphocytosis	(< 1000 / CM3)
Pleural fluid PH	7.6	(7.60-7.64)
Pleural fluid LDH	250 U/L	
Serum LDH	600 U/L	(135-750 U/L)
Pleural fluid protein	3.5 g/dL	
Serum protein	6 g/dL	(6.4–8.3 g/dL)
Pleural fluid glucose	2.8 mmol/L	
Pleural fluid glucose	2.8 mmol/L	
Serum glucose	4.8 mmol/L	
Pleural fluid triglyceride	0.6 mmol/L	(<1.24 mmol/L)

What is the most likely diagnosis?

- ○ **Lung abscess**
- ○ **Malignant effusion**
- ○ **Tuberculous effusion**
- ○ **Rheumatoid effusion**
- ● **Pneumonic effusion**

Description

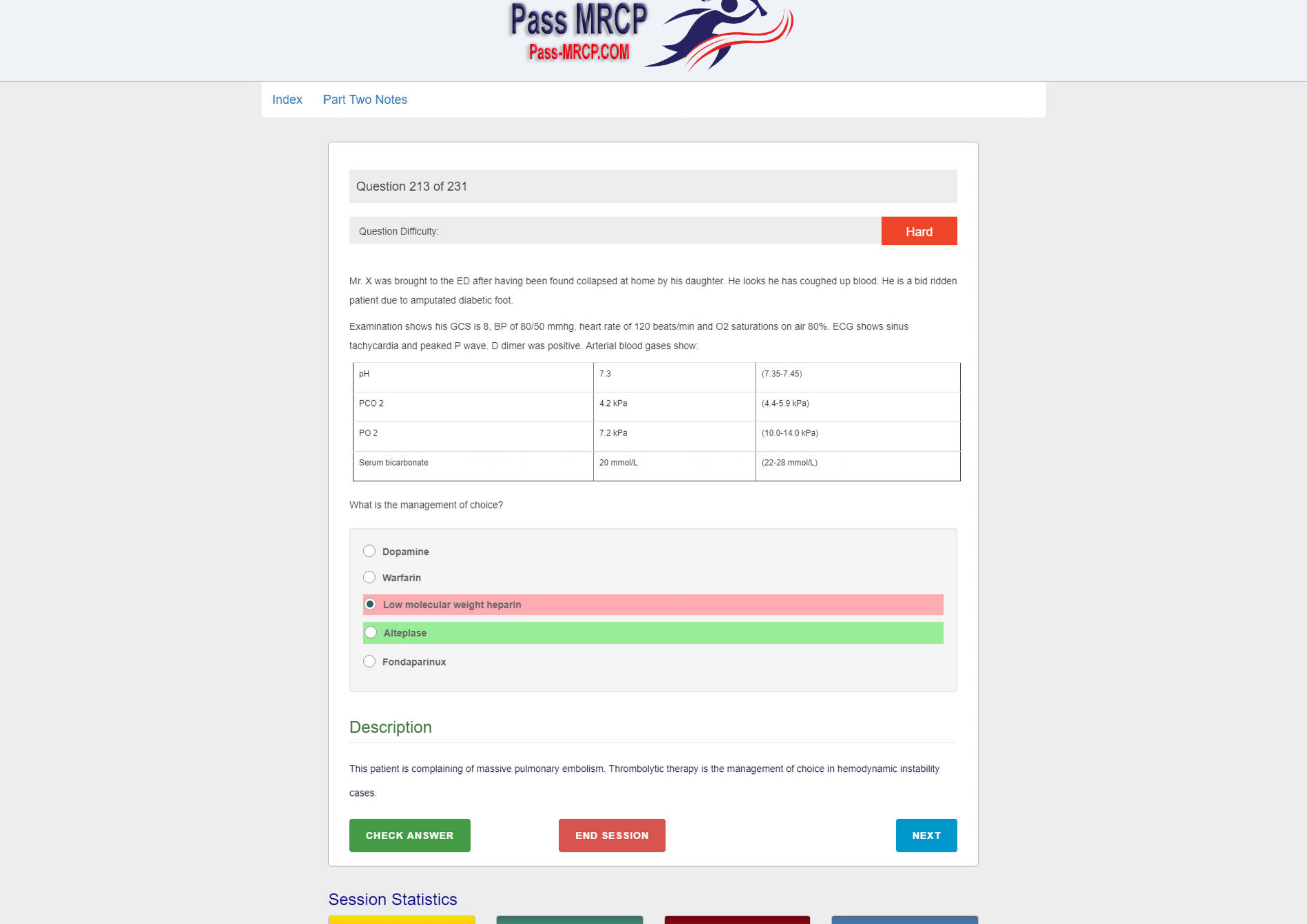
TB effusion is manifested by exudative and hematogenous effusion with low pleural glucose concentration (1.5 - 3 mmol/dL) and pleural fluid lymphocytosis, with lymphocyte values greater than 85%.

Adenosine deaminase (ADA) activity of greater than 43 U/mL in pleural fluid supports the diagnosis of tuberculous pleurisy.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 211 ✓ **Correct**: 39 ✕ **Incorrect**: 172 **Average Score**: 18.48 %



Question 213 of 231

Question Difficulty: Hard

Mr. X was brought to the ED after having been found collapsed at home by his daughter. He looks he has coughed up blood. He is a bid ridden patient due to amputated diabetic foot.

Examination shows his GCS is 8, BP of 80/50 mmhg, heart rate of 120 beats/min and O2 saturations on air 80%. ECG shows sinus tachycardia and peaked P wave. D dimer was positive. Arterial blood gases show:

pH	7.3	(7.35-7.45)
PCO 2	4.2 kPa	(4.4-5.9 kPa)
PO 2	7.2 kPa	(10.0-14.0 kPa)
Serum bicarbonate	20 mmol/L	(22-28 mmol/L)

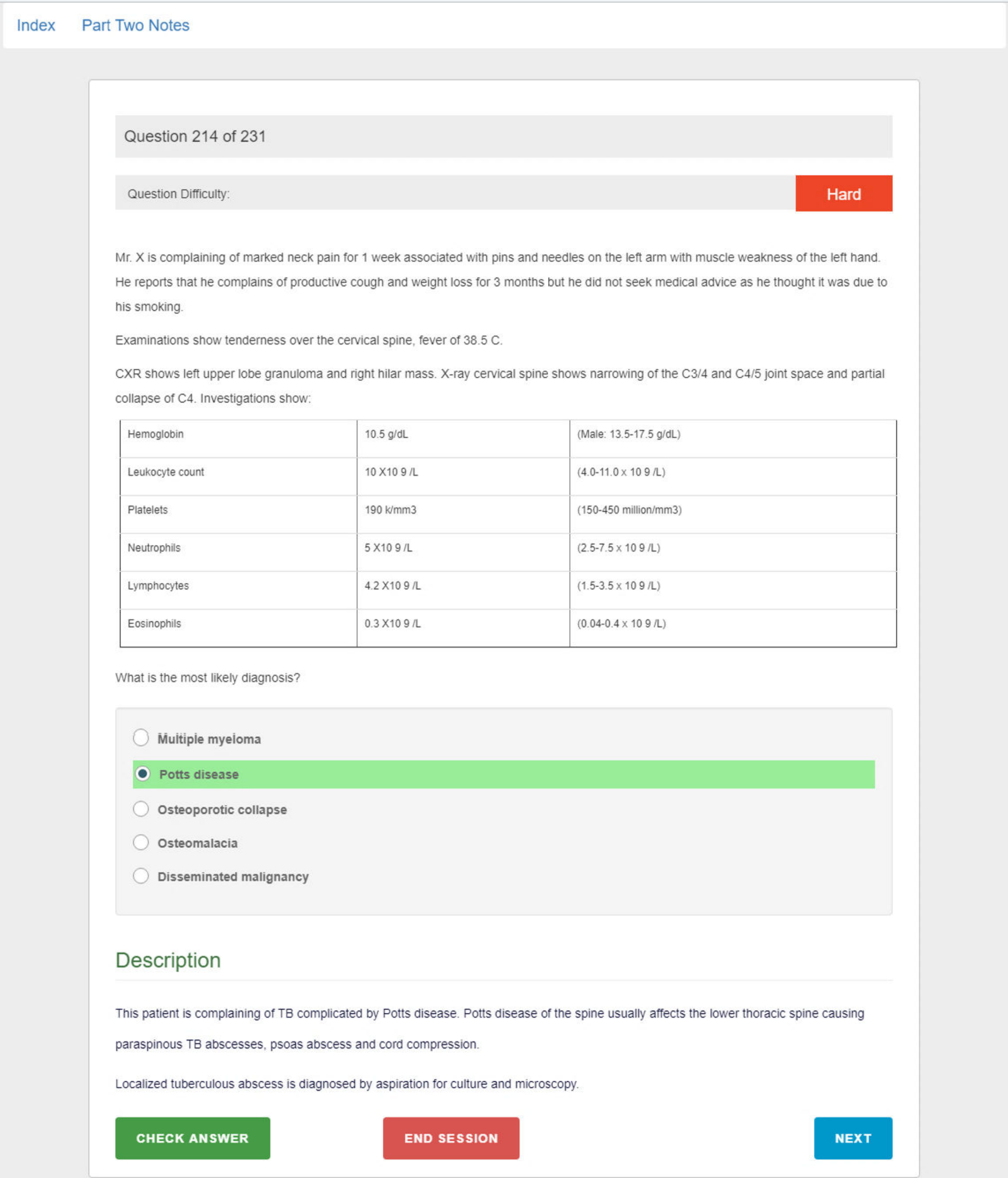
What is the management of choice?

- ○ **Dopamine**
- ○ **Warfarin**
- ● **Low molecular weight heparin**
- ○ **Alteplase**
- ○ **Fondaparinux**

Description

This patient is complaining of massive pulmonary embolism. Thrombolytic therapy is the management of choice in hemodynamic instability cases.

Session Statistics



Question 214 of 231

Question Difficulty: **Hard**

Mr. X is complaining of marked neck pain for 1 week associated with pins and needles on the left arm with muscle weakness of the left hand. He reports that he complains of productive cough and weight loss for 3 months but he did not seek medical advice as he thought it was due to his smoking.

Examinations show tenderness over the cervical spine, fever of 38.5 C.

CXR shows left upper lobe granuloma and right hilar mass. X-ray cervical spine shows narrowing of the C3/4 and C4/5 joint space and partial collapse of C4. Investigations show:

Hemoglobin	10.5 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	10 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	190 k/mm3	(150-450 million/mm3)
Neutrophils	5 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	4.2 X10 9 /L	(1.5-3.5 x 10 9 /L)
Eosinophils	0.3 X10 9 /L	(0.04-0.4 x 10 9 /L)

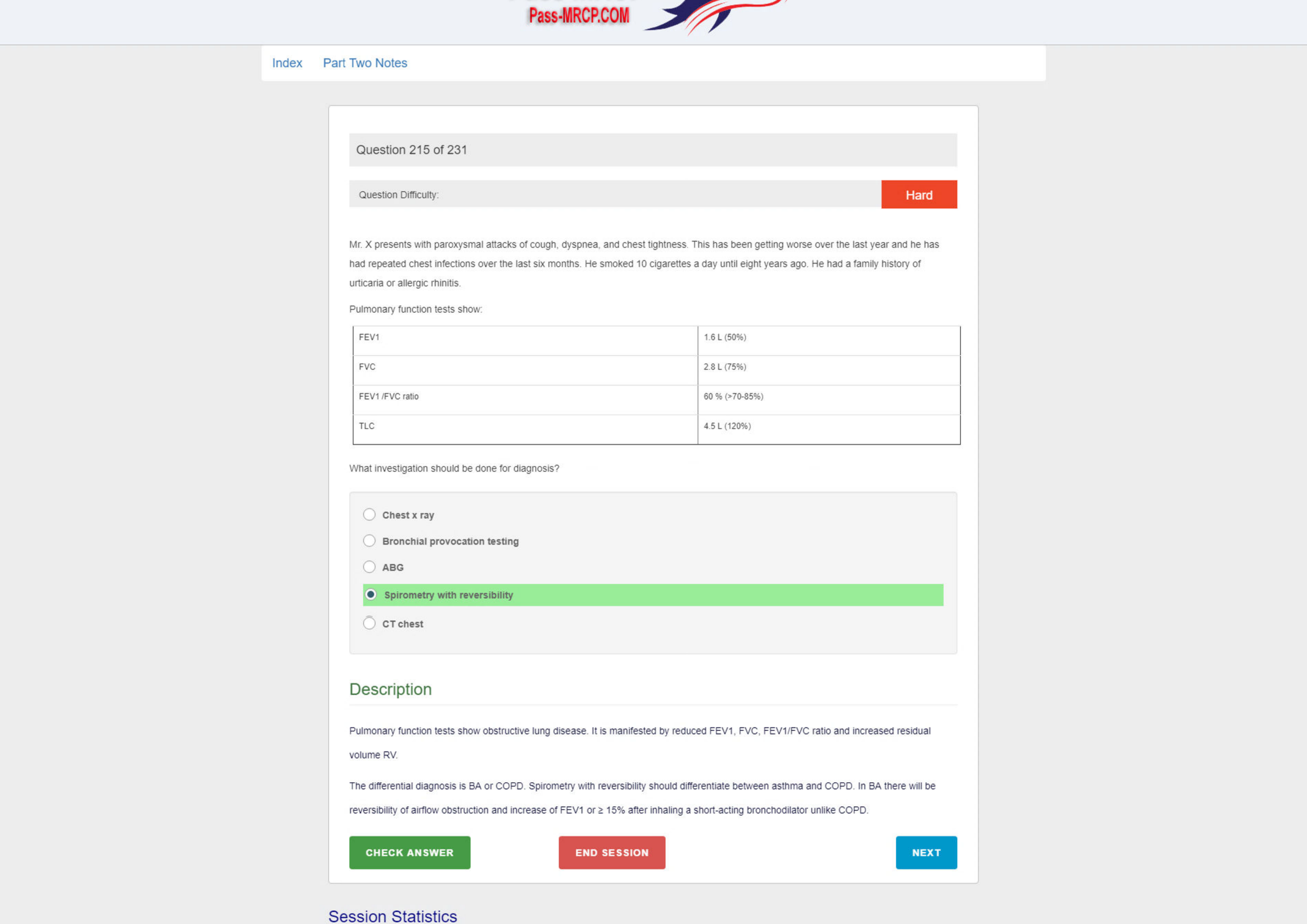
What is the most likely diagnosis?

- ○ **Multiple myeloma**
- ● **Potts disease**
- ○ **Osteoporotic collapse**
- ○ **Osteomalacia**
- ○ **Disseminated malignancy**

Description

This patient is complaining of TB complicated by Potts disease. Potts disease of the spine usually affects the lower thoracic spine causing paraspinous TB abscesses, psoas abscess and cord compression.

Localized tuberculous abscess is diagnosed by aspiration for culture and microscopy.



Question 215 of 231

Question Difficulty: **Hard**

Mr. X presents with paroxysmal attacks of cough, dyspnea, and chest tightness. This has been getting worse over the last year and he has had repeated chest infections over the last six months. He smoked 10 cigarettes a day until eight years ago. He had a family history of urticaria or allergic rhinitis.

Pulmonary function tests show:

FEV1	1.6 L (50%)
FVC	2.8 L (75%)
FEV1 /FVC ratio	60 % (>70-85%)
TLC	4.5 L (120%)

What investigation should be done for diagnosis?

- ○ **Chest x ray**
- ○ **Bronchial provocation testing**
- ○ **ABG**
- ● **Spirometry with reversibility**
- ○ **CT chest**

Description

Pulmonary function tests show obstructive lung disease. It is manifested by reduced FEV1, FVC, FEV1/FVC ratio and increased residual volume RV.

The differential diagnosis is BA or COPD. Spirometry with reversibility should differentiate between asthma and COPD. In BA there will be reversibility of airflow obstruction and increase of FEV1 or ≥ 15% after inhaling a short-acting bronchodilator unlike COPD.

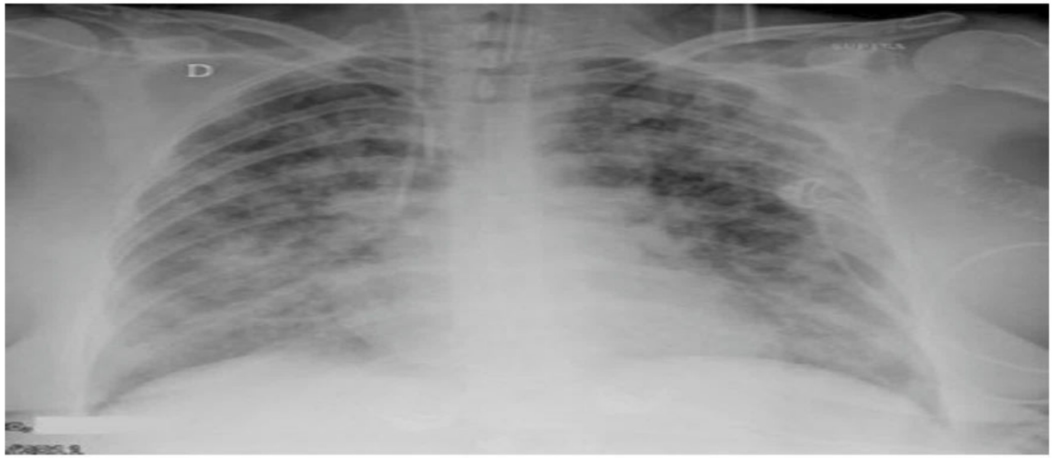
Session Statistics

Question 216 of 231

Question Difficulty: **Easy**

Mr. X was admitted to the ICU due to a fire accident. Two days later he becomes anxious, tachypnoeic, and short of breath.

Examination shows a respiratory rate of 26 breaths per minute and a pulse rate of 110 beats per minute. Auscultation of the chest reveals course crackles over both lung fields. An emergency CXR is shown in the image. An echo shows a PCWP of 12 mmhg.



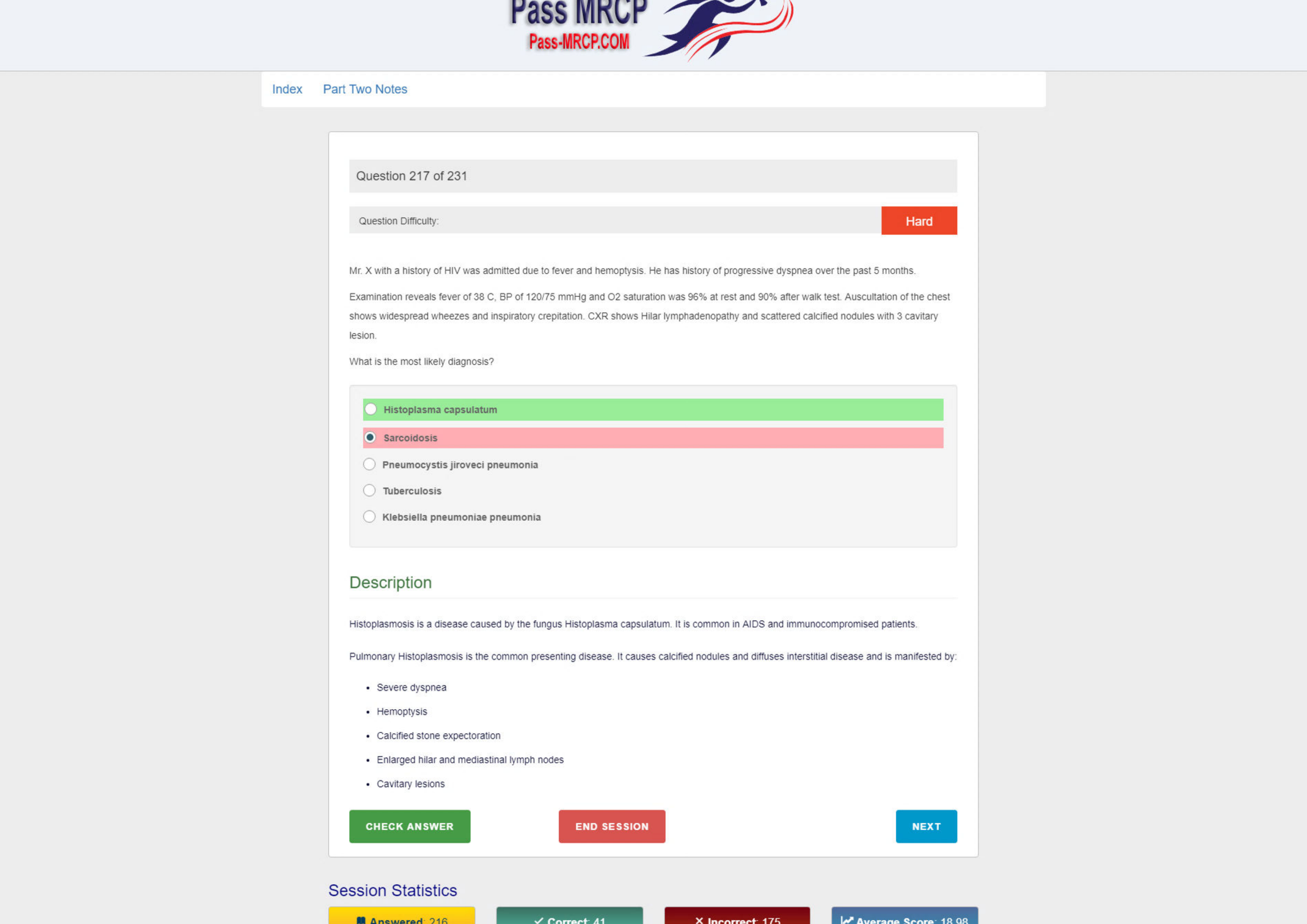
What is the most likely diagnosis?

- ○ **Adult respiratory distress syndrome**
- ○ **Left ventricular failure**
- ○ **Pulmonary hemorrhage**
- ● **Cardiogenic pulmonary edema**
- ○ **Nosocomial pneumonia**

Description

Acute respiratory distress syndrome (ARDS) is characterized by the development of acute dyspnea and hypoxemia within hours to days of an inciting event in the absence of evidence of cardiogenic pulmonary edema (pulmonary capillary wedge pressure < 18 mmhg).

CHECK ANSWER END SESSION NEXT



Question 217 of 231

Question Difficulty: Hard

Mr. X with a history of HIV was admitted due to fever and hemoptysis. He has history of progressive dyspnea over the past 5 months.

Examination reveals fever of 38 C, BP of 120/75 mmHg and O2 saturation was 96% at rest and 90% after walk test. Auscultation of the chest shows widespread wheezes and inspiratory crepitation. CXR shows Hilar lymphadenopathy and scattered calcified nodules with 3 cavitary lesion.

What is the most likely diagnosis?

○ **Histoplasma capsulatum**
● **Sarcoidosis**
○ **Pneumocystis jiroveci pneumonia**
○ **Tuberculosis**
○ **Klebsiella pneumoniae pneumonia**

Description

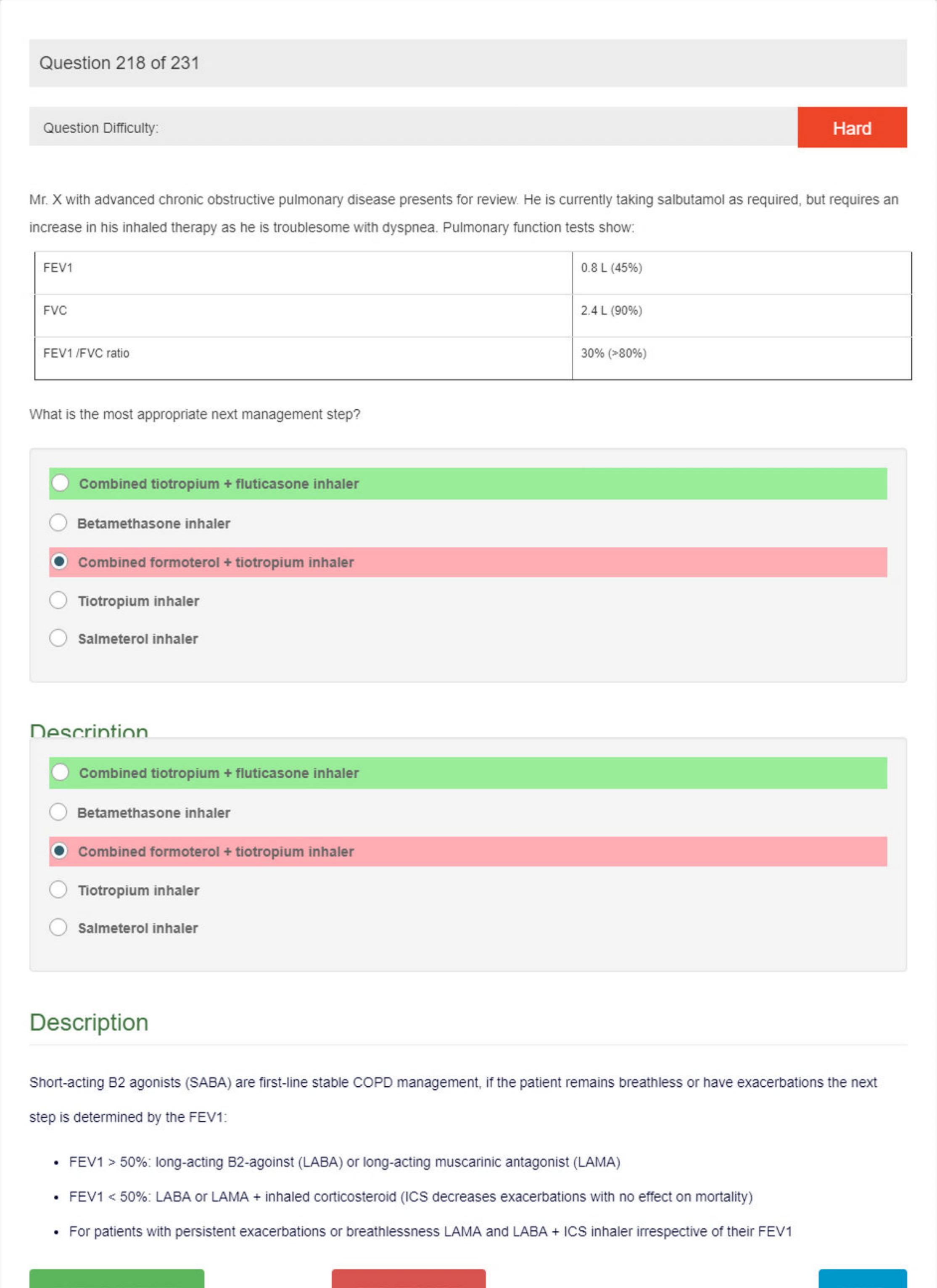
Histoplasmosis is a disease caused by the fungus Histoplasma capsulatum. It is common in AIDS and immunocompromised patients.

Pulmonary Histoplasmosis is the common presenting disease. It causes calcified nodules and diffuses interstitial disease and is manifested by:

- Severe dyspnea
- Hemoptysis
- Calcified stone expectoration
- Enlarged hilar and mediastinal lymph nodes
- Cavitary lesions

Session Statistics

Answered: 216
✓ Correct: 41
✕ Incorrect: 175
Average Score: 18.98



Question 218 of 231

Question Difficulty: **Hard**

Mr. X with advanced chronic obstructive pulmonary disease presents for review. He is currently taking salbutamol as required, but requires an increase in his inhaled therapy as he is troublesome with dyspnea. Pulmonary function tests show:

FEV1	0.8 L (45%)
FVC	2.4 L (90%)
FEV1 /FVC ratio	30% (>80%)

What is the most appropriate next management step?

- ○ **Combined tiotropium + fluticasone inhaler**
- ○ **Betamethasone inhaler**
- ● **Combined formoterol + tiotropium inhaler**
- ○ **Tiotropium inhaler**
- ○ **Salmeterol inhaler**

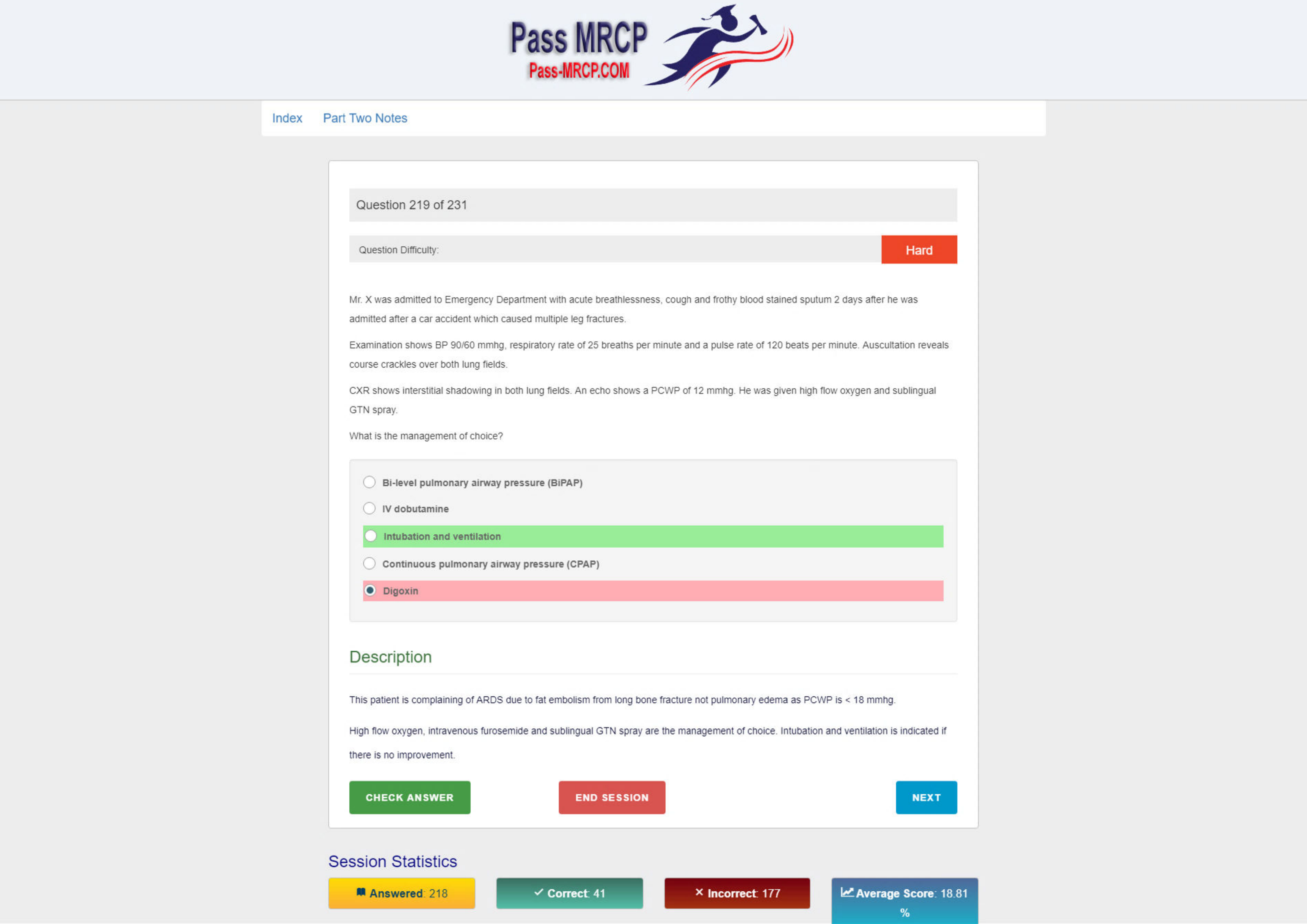
Description

- ○ **Combined tiotropium + fluticasone inhaler**
- ○ **Betamethasone inhaler**
- ● **Combined formoterol + tiotropium inhaler**
- ○ **Tiotropium inhaler**
- ○ **Salmeterol inhaler**

Description

Short-acting B2 agonists (SABA) are first-line stable COPD management, if the patient remains breathless or have exacerbations the next step is determined by the FEV1:

- FEV1 > 50%: long-acting B2-agoinst (LABA) or long-acting muscarinic antagonist (LAMA)
- FEV1 < 50%: LABA or LAMA + inhaled corticosteroid (ICS decreases exacerbations with no effect on mortality)
- For patients with persistent exacerbations or breathlessness LAMA and LABA + ICS inhaler irrespective of their FEV1



Question 219 of 231

Question Difficulty: **Hard**

Mr. X was admitted to Emergency Department with acute breathlessness, cough and frothy blood stained sputum 2 days after he was admitted after a car accident which caused multiple leg fractures.

Examination shows BP 90/60 mmhg, respiratory rate of 25 breaths per minute and a pulse rate of 120 beats per minute. Auscultation reveals course crackles over both lung fields.

CXR shows interstitial shadowing in both lung fields. An echo shows a PCWP of 12 mmhg. He was given high flow oxygen and sublingual GTN spray.

What is the management of choice?

- ○ **Bi-level pulmonary airway pressure (BiPAP)**
- ○ **IV dobutamine**
- ○ **Intubation and ventilation**
- ○ **Continuous pulmonary airway pressure (CPAP)**
- ● **Digoxin**

Description

This patient is complaining of ARDS due to fat embolism from long bone fracture not pulmonary edema as PCWP is < 18 mmhg.

High flow oxygen, intravenous furosemide and sublingual GTN spray are the management of choice. Intubation and ventilation is indicated if there is no improvement.

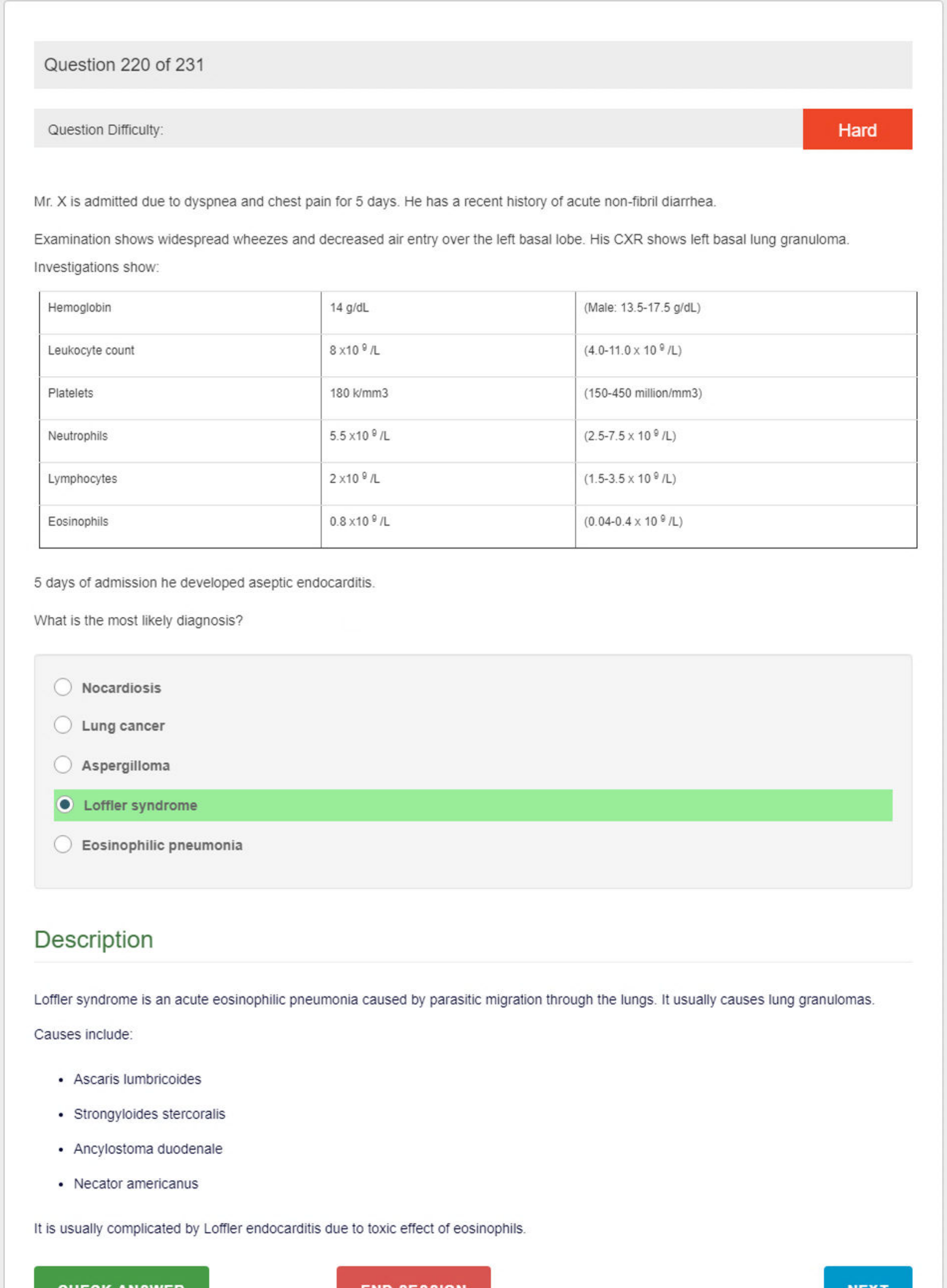
Session Statistics

Answered: 218

✓ **Correct**: 41

✕ **Incorrect**: 177

Average Score: 18.81 %



Question 220 of 231

Question Difficulty: **Hard**

Mr. X is admitted due to dyspnea and chest pain for 5 days. He has a recent history of acute non-fibril diarrhea.

Examination shows widespread wheezes and decreased air entry over the left basal lobe. His CXR shows left basal lung granuloma.

Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	8 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 k/mm3	(150-450 million/mm3)
Neutrophils	5.5 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	2 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.8 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)

5 days of admission he developed aseptic endocarditis.

What is the most likely diagnosis?

○ **Nocardiosis**

○ **Lung cancer**

○ **Aspergilloma**

● **Loffler syndrome**

○ **Eosinophilic pneumonia**

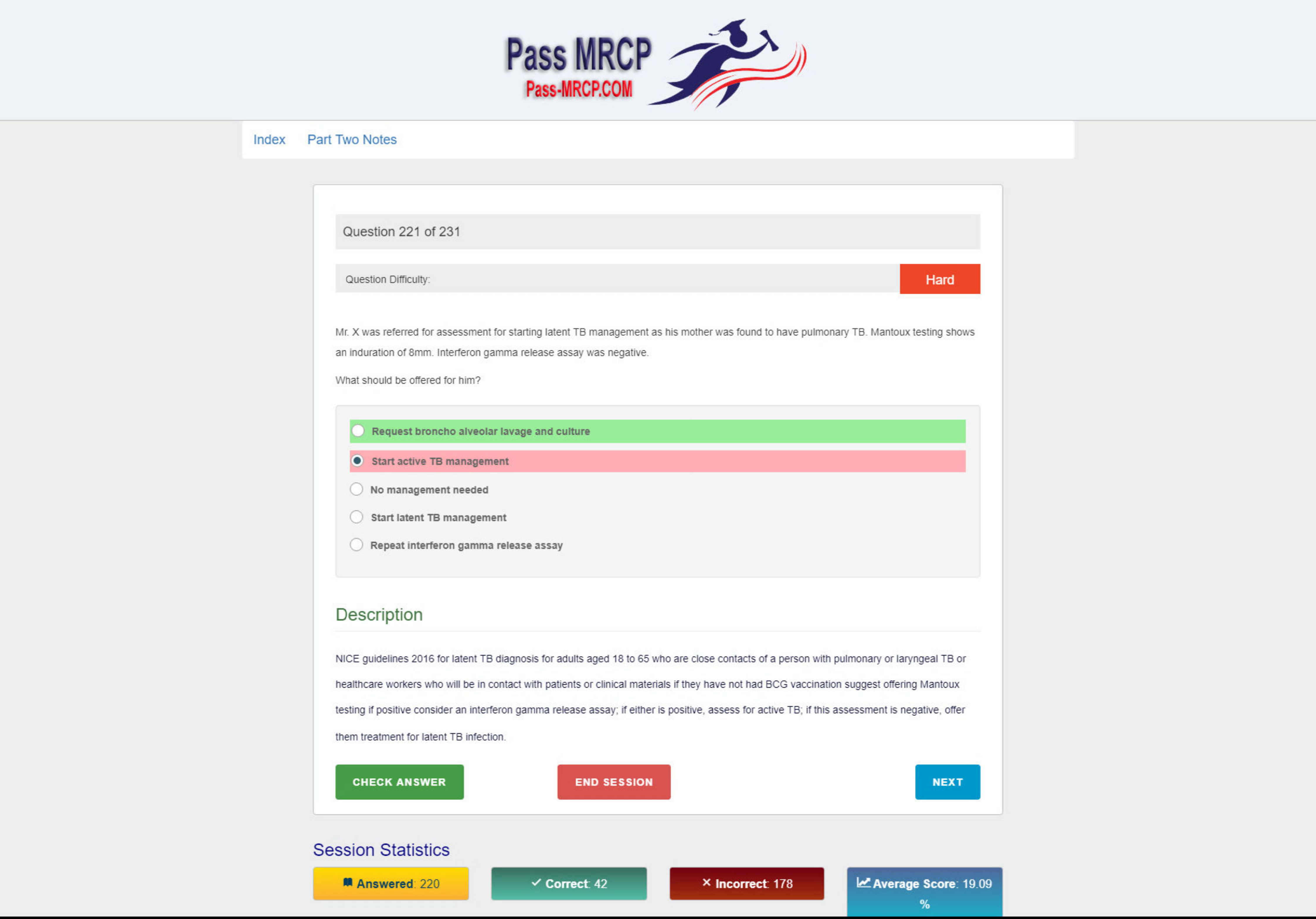
Description

Loffler syndrome is an acute eosinophilic pneumonia caused by parasitic migration through the lungs. It usually causes lung granulomas.

Causes include:

- Ascaris lumbricoides
- Strongyloides stercoralis
- Ancylostoma duodenale
- Necator americanus

It is usually complicated by Loffler endocarditis due to toxic effect of eosinophils.



Question 221 of 231

Question Difficulty: **Hard**

Mr. X was referred for assessment for starting latent TB management as his mother was found to have pulmonary TB. Mantoux testing shows an induration of 8mm. Interferon gamma release assay was negative.

What should be offered for him?

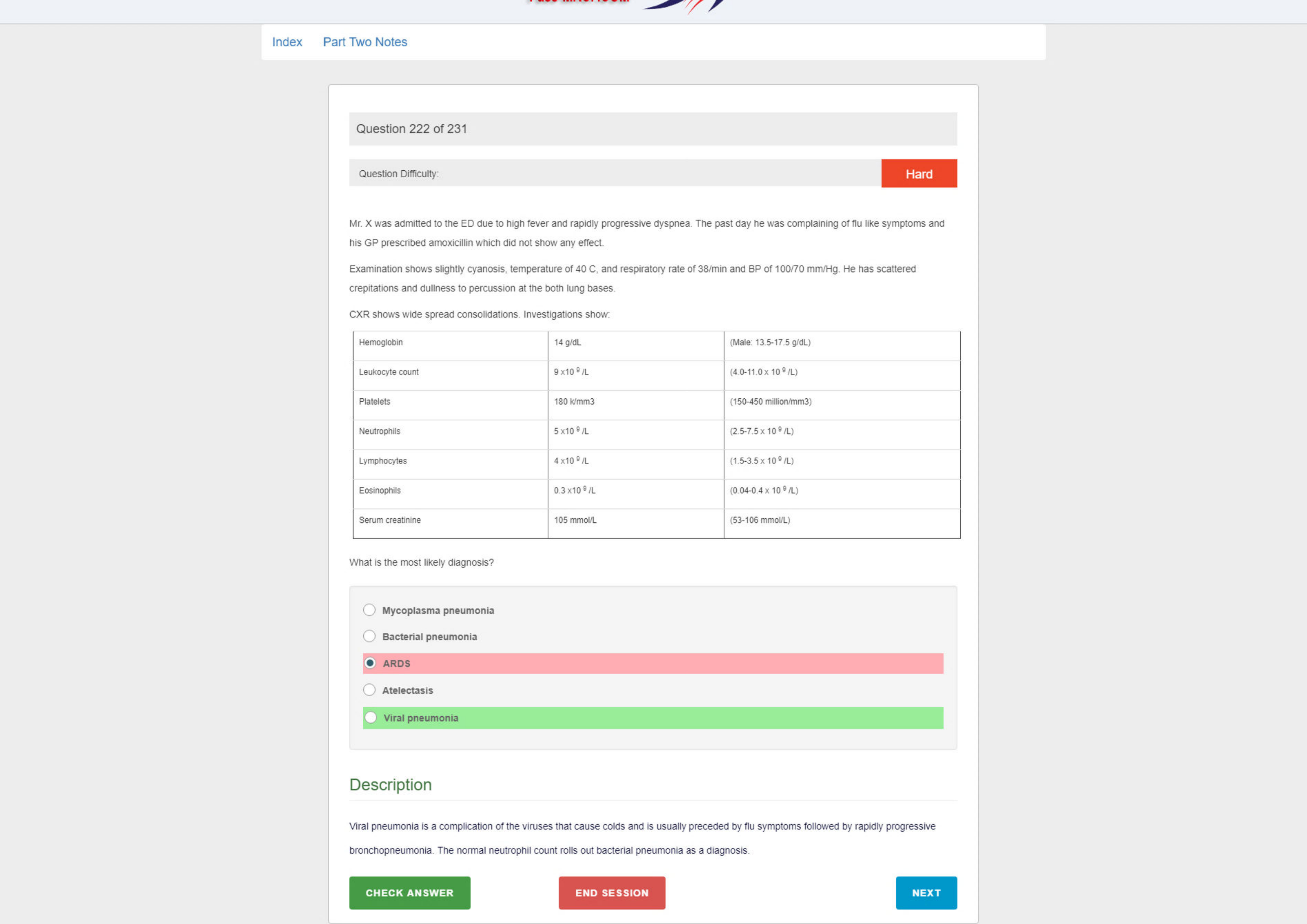
○ **Request broncho alveolar lavage and culture**
● **Start active TB management**
○ **No management needed**
○ **Start latent TB management**
○ **Repeat interferon gamma release assay**

Description

NICE guidelines 2016 for latent TB diagnosis for adults aged 18 to 65 who are close contacts of a person with pulmonary or laryngeal TB or healthcare workers who will be in contact with patients or clinical materials if they have not had BCG vaccination suggest offering Mantoux testing if positive consider an interferon gamma release assay; if either is positive, assess for active TB; if this assessment is negative, offer them treatment for latent TB infection.

Session Statistics

Answered: 220
✓ **Correct**: 42
✕ **Incorrect**: 178
Average Score: 19.09 %



Question 222 of 231

Mr. X was admitted to the ED due to high fever and rapidly progressive dyspnea. The past day he was complaining of flu like symptoms and his GP prescribed amoxicillin which did not show any effect.

Examination shows slightly cyanosis, temperature of 40 C, and respiratory rate of 38/min and BP of 100/70 mm/Hg. He has scattered crepitations and dullness to percussion at the both lung bases.

CXR shows wide spread consolidations. Investigations show:

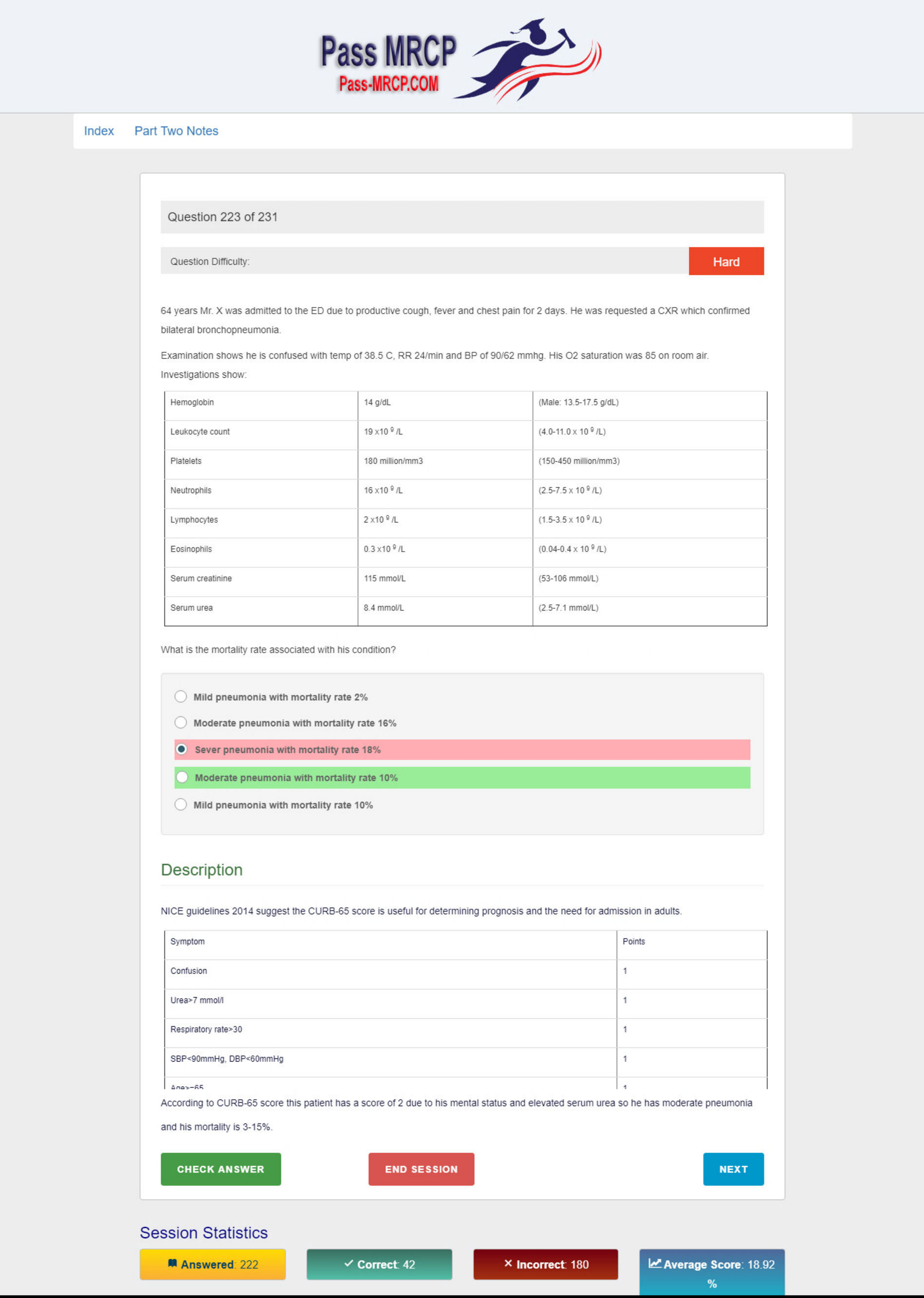
Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	9 x10 ^{9} /L	(4.0-11.0 x 10 ^{9} /L)
Platelets	180 k/mm3	(150-450 million/mm3)
Neutrophils	5 x10 ^{9} /L	(2.5-7.5 x 10 ^{9} /L)
Lymphocytes	4 x10 ^{9} /L	(1.5-3.5 x 10 ^{9} /L)
Eosinophils	0.3 x10 ^{9} /L	(0.04-0.4 x 10 ^{9} /L)
Serum creatinine	105 mmol/L	(53-106 mmol/L)

What is the most likely diagnosis?

- ○ **Mycoplasma pneumonia**
- ○ **Bacterial pneumonia**
- ● **ARDS**
- ○ **Atelectasis**
- ○ **Viral pneumonia**

Description

Viral pneumonia is a complication of the viruses that cause colds and is usually preceded by flu symptoms followed by rapidly progressive bronchopneumonia. The normal neutrophil count rolls out bacterial pneumonia as a diagnosis.



Question 223 of 231

Question Difficulty: **Hard**

64 years Mr. X was admitted to the ED due to productive cough, fever and chest pain for 2 days. He was requested a CXR which confirmed bilateral bronchopneumonia.

Examination shows he is confused with temp of 38.5 C, RR 24/min and BP of 90/62 mmhg. His O2 saturation was 85 on room air. Investigations show:

Hemoglobin	14 g/dL	(Male: 13.5-17.5 g/dL)
Leukocyte count	19×10^{9} /L	($4.0-11.0 \times 10^{9}$ /L)
Platelets	180 million/mm3	(150-450 million/mm3)
Neutrophils	16×10^{9} /L	($2.5-7.5 \times 10^{9}$ /L)
Lymphocytes	2×10^{9} /L	($1.5-3.5 \times 10^{9}$ /L)
Eosinophils	0.3×10^{9} /L	($0.04-0.4 \times 10^{9}$ /L)
Serum creatinine	115 mmol/L	(53-106 mmol/L)
Serum urea	8.4 mmol/L	(2.5-7.1 mmol/L)

What is the mortality rate associated with his condition?

○ **Mild pneumonia with mortality rate 2%**
○ **Moderate pneumonia with mortality rate 16%**
● **Sever pneumonia with mortality rate 18%**
○ **Moderate pneumonia with mortality rate 10%**
○ **Mild pneumonia with mortality rate 10%**

Description

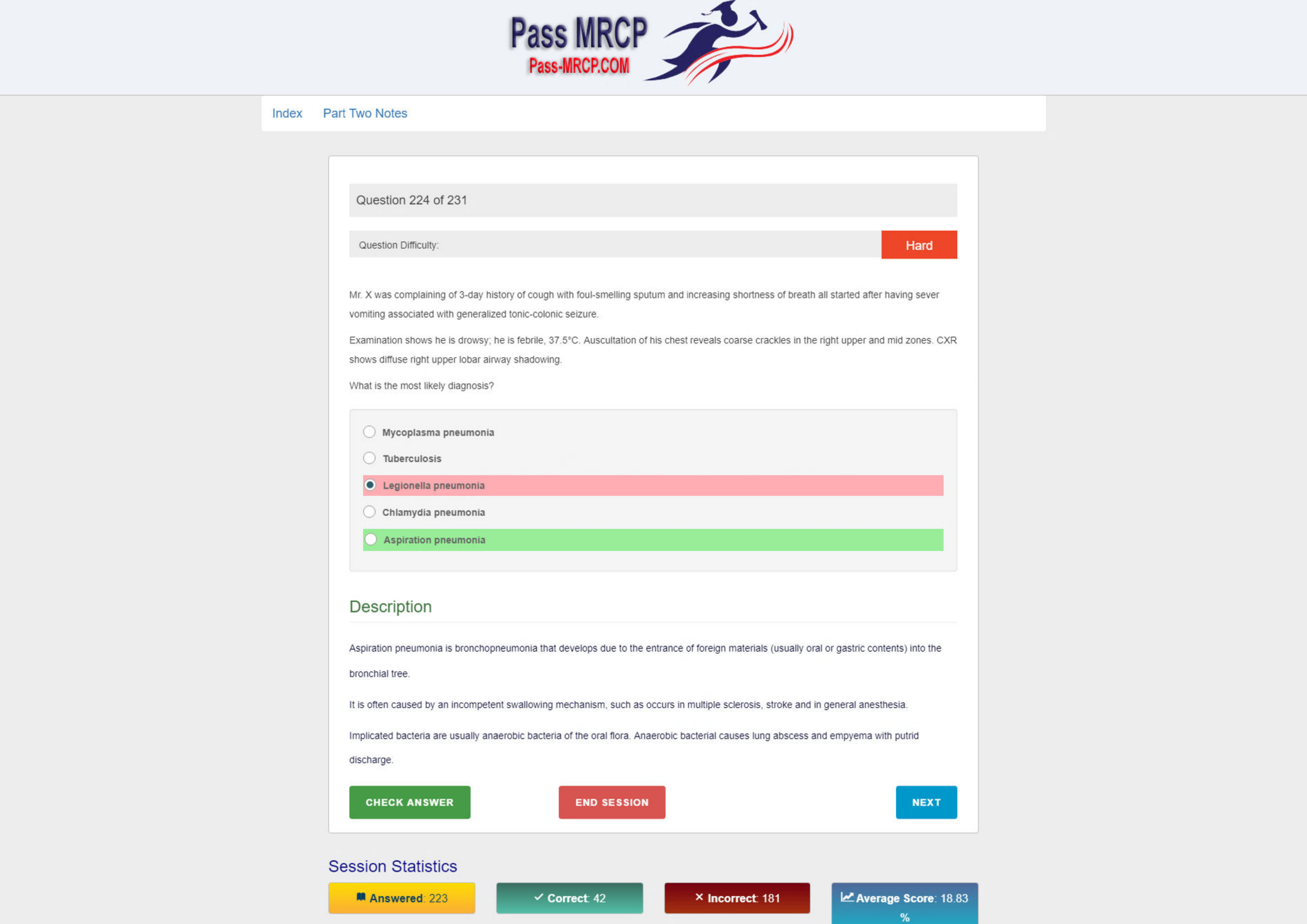
NICE guidelines 2014 suggest the CURB-65 score is useful for determining prognosis and the need for admission in adults.

Symptom	Points
Confusion	1
Urea>7 mmol/l	1
Respiratory rate>30	1
SBP<90mmHg, DBP<60mmHg	1
Age>=65	1

According to CURB-65 score this patient has a score of 2 due to his mental status and elevated serum urea so he has moderate pneumonia and his mortality is 3-15%.

Session Statistics

Answered: 222
✓ Correct: 42
✕ Incorrect: 180
Average Score: 18.92 %



Question 224 of 231

Question Difficulty: Hard

Mr. X was complaining of 3-day history of cough with foul-smelling sputum and increasing shortness of breath all started after having sever vomiting associated with generalized tonic-colonic seizure.

Examination shows he is drowsy; he is febrile, 37.5°C. Auscultation of his chest reveals coarse crackles in the right upper and mid zones. CXR shows diffuse right upper lobar airway shadowing.

What is the most likely diagnosis?

- ○ Mycoplasma pneumonia
- ○ Tuberculosis
- ● Legionella pneumonia
- ○ Chlamydia pneumonia
- ○ Aspiration pneumonia

Description

Aspiration pneumonia is bronchopneumonia that develops due to the entrance of foreign materials (usually oral or gastric contents) into the bronchial tree.

It is often caused by an incompetent swallowing mechanism, such as occurs in multiple sclerosis, stroke and in general anesthesia.

Implicated bacteria are usually anaerobic bacteria of the oral flora. Anaerobic bacterial causes lung abscess and empyema with putrid discharge.

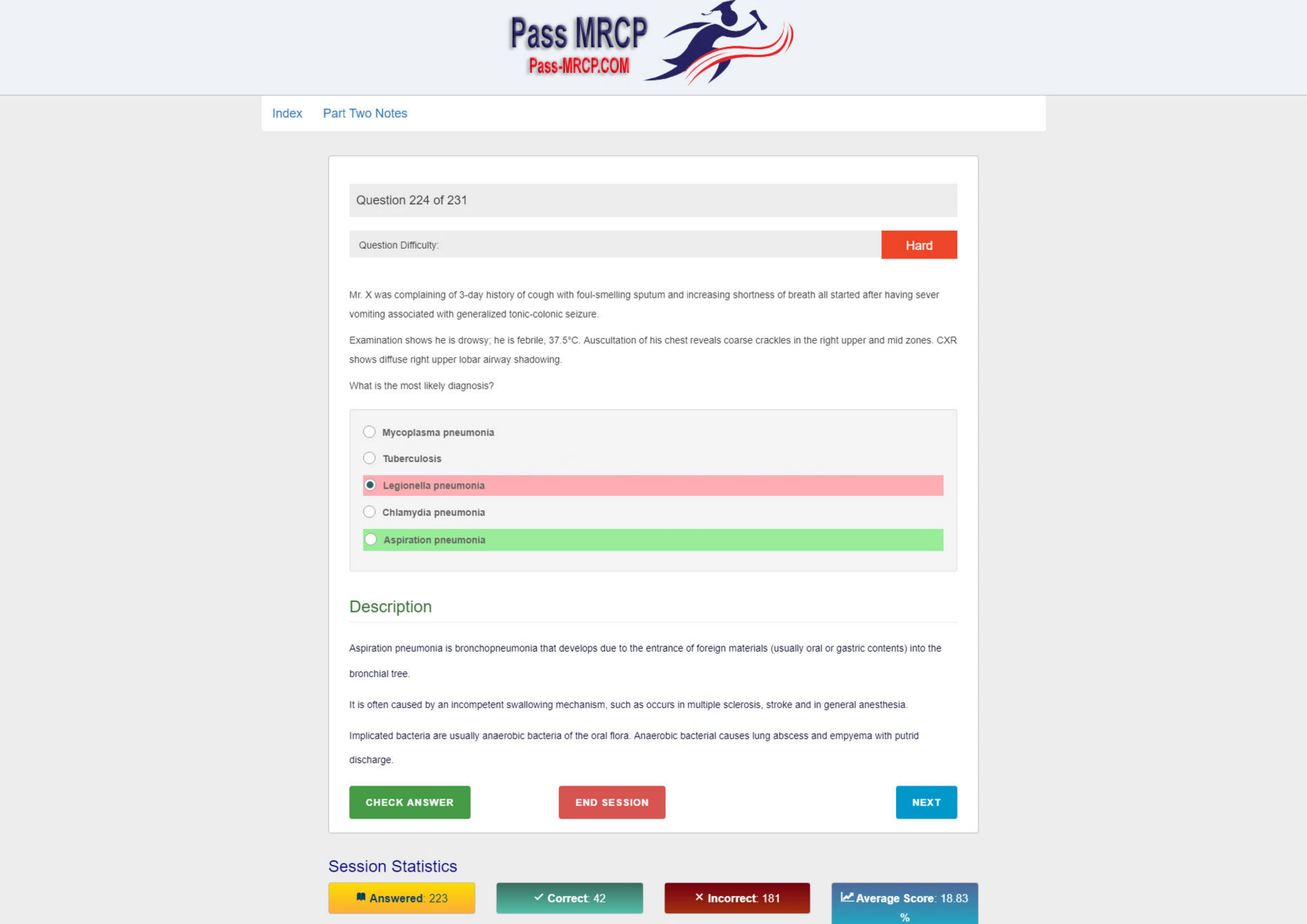
Session Statistics

Answered: 223

✓ Correct: 42

✕ Incorrect: 181

Average Score: 18.83 %



Question 224 of 231

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Implicated bacteria are usually anaerobic bacteria of the oral flora. Anaerobic bacterial causes lung abscess and empyema with putrid discharge.

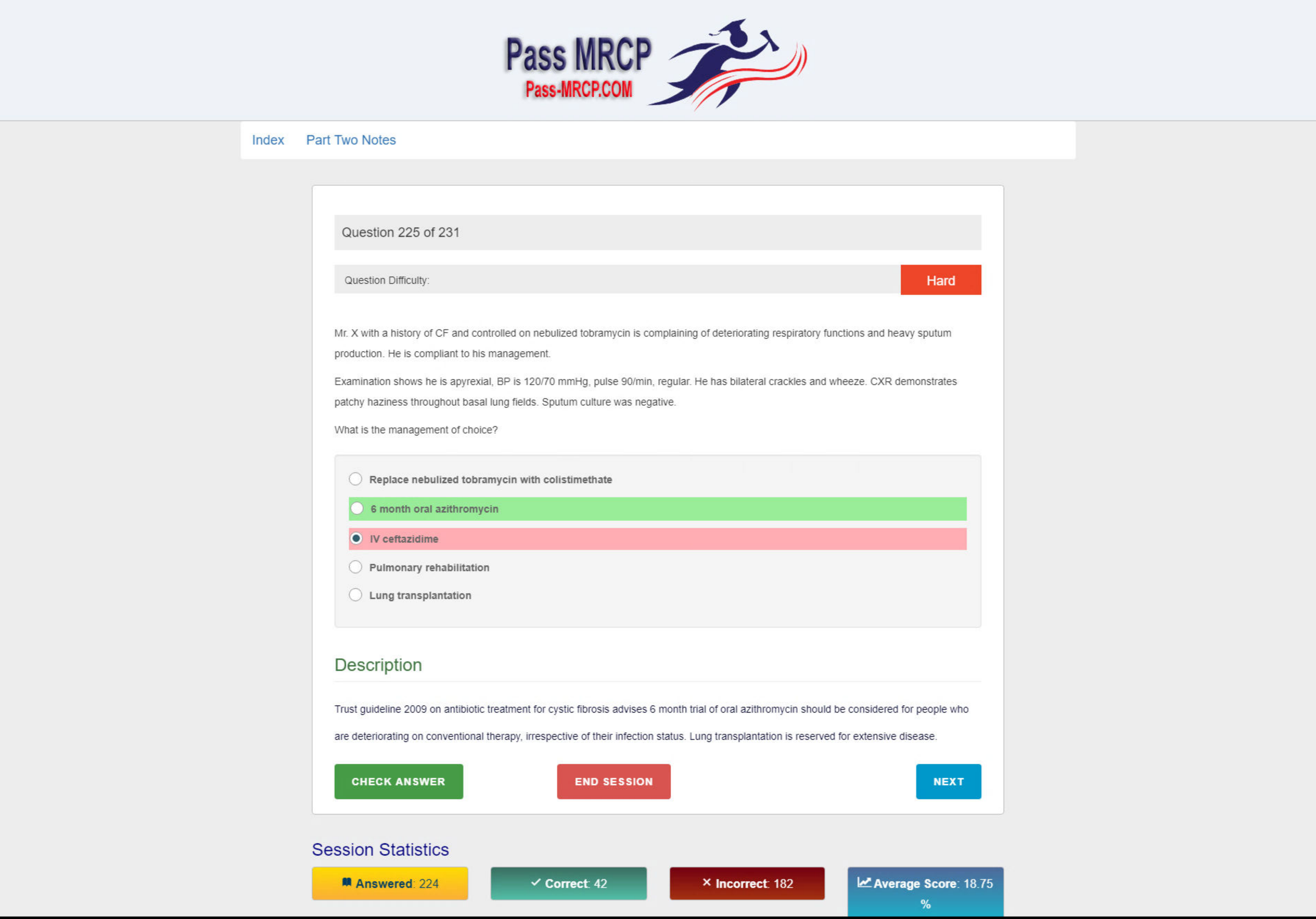
Session Statistics

Answered: 223

✓ **Correct**: 42

✕ **Incorrect**: 181

Average Score: 18.83 %



Question 225 of 231

Question Difficulty: Hard

Mr. X with a history of CF and controlled on nebulized tobramycin is complaining of deteriorating respiratory functions and heavy sputum production. He is compliant to his management.

Examination shows he is apyrexial, BP is 120/70 mmHg, pulse 90/min, regular. He has bilateral crackles and wheeze. CXR demonstrates patchy haziness throughout basal lung fields. Sputum culture was negative.

What is the management of choice?

- ○ **Replace nebulized tobramycin with colistimethate**
- ○ **6 month oral azithromycin**
- ● **IV ceftazidime**
- ○ **Pulmonary rehabilitation**
- ○ **Lung transplantation**

Description

Trust guideline 2009 on antibiotic treatment for cystic fibrosis advises 6 month trial of oral azithromycin should be considered for people who are deteriorating on conventional therapy, irrespective of their infection status. Lung transplantation is reserved for extensive disease.

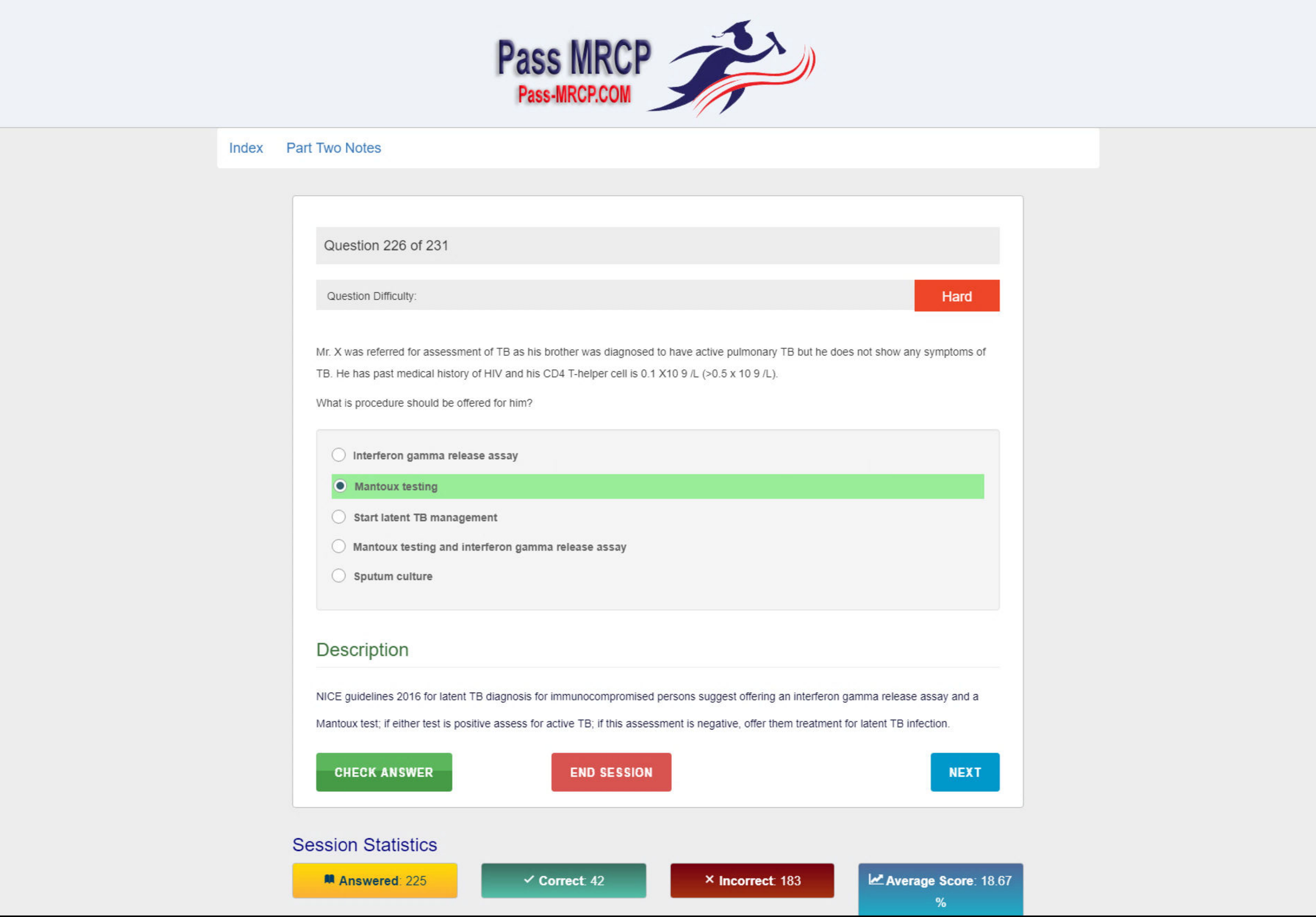
Session Statistics

Answered: 224

✓ **Correct**: 42

✕ **Incorrect**: 182

Average Score: 18.75 %



Question 226 of 231

Question Difficulty: Hard

Mr. X was referred for assessment of TB as his brother was diagnosed to have active pulmonary TB but he does not show any symptoms of TB. He has past medical history of HIV and his CD4 T-helper cell is 0.1 X10 9 /L (>0.5 x 10 9 /L).

What is procedure should be offered for him?

○ Interferon gamma release assay
● Mantoux testing
○ Start latent TB management
○ Mantoux testing and interferon gamma release assay
○ Sputum culture

Description

NICE guidelines 2016 for latent TB diagnosis for immunocompromised persons suggest offering an interferon gamma release assay and a Mantoux test; if either test is positive assess for active TB; if this assessment is negative, offer them treatment for latent TB infection.

Session Statistics

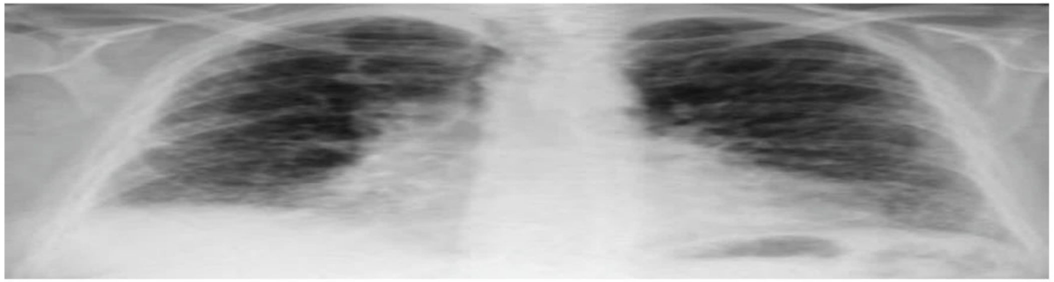
Answered: 225
✓ Correct: 42
× Incorrect: 183
Average Score: 18.67 %

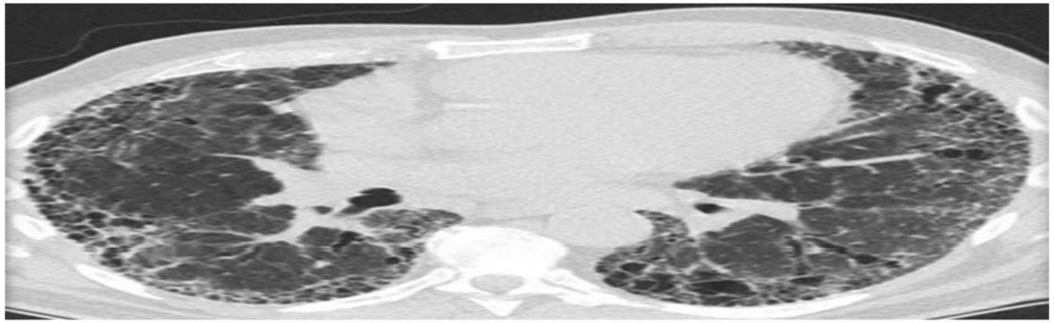
Question 227 of 231

Question Difficulty: **Hard**

Mr. X is a heavy smoker is complaining of 6 month history of deteriorating non-productive cough and exertional dyspnea.

Examination shows he is cyanosed and has clubbing of the fingers and there are bilateral basal crackles. His CXR and CT are shown in the images.





What is the most likely diagnosis?

○ **Tuberculosis**

○ **Sarcoidosis**

○ **Bronchiectasis**

● **Idiopathic pulmonary fibrosis**

○ **COPD**

Description

CXR shows lower lobar fibronodular pattern. HRCT of lung shows extensive fibrosis with ground glass appearance and some emphysematous bulla all points to pulmonary fibrosis. Idiopathic pulmonary fibrosis is the only listed cause of pulmonary fibrosis are predominates in lower lobes.

Question 227 of 231

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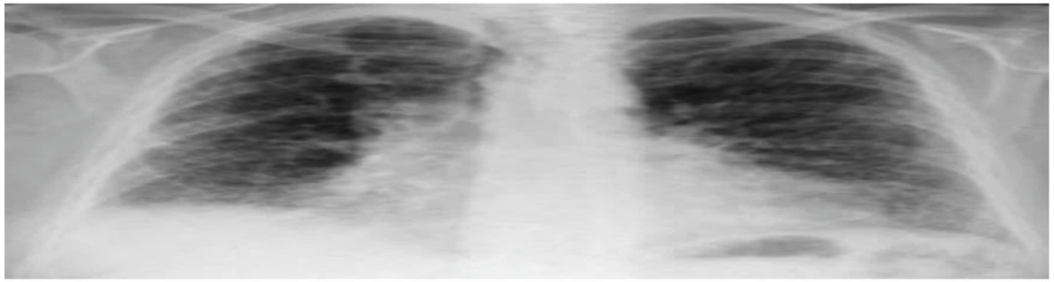

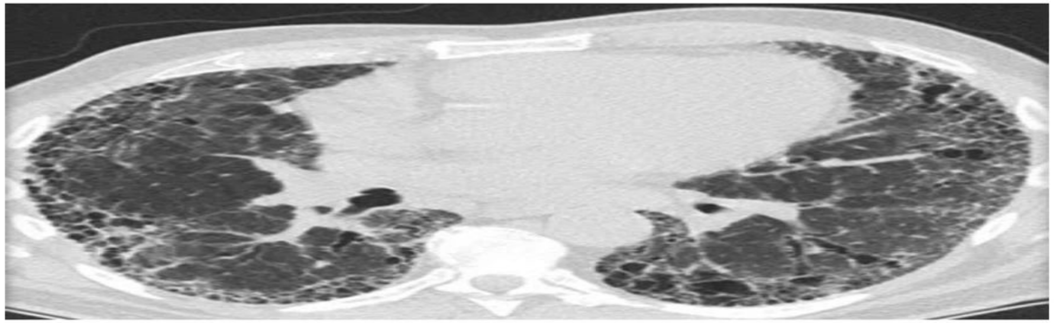

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- ○ **Tuberculosis**
- ○ **Sarcoidosis**
- ○ **Bronchiectasis**
- ● **Idiopathic pulmonary fibrosis**
- ○ **COPD**

Description

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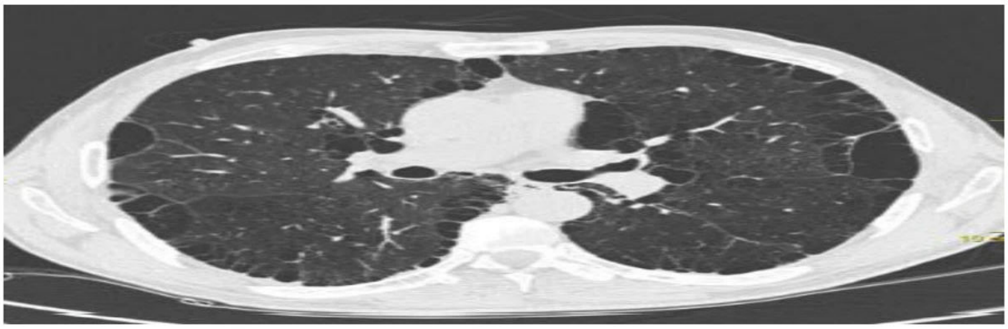
Question 228 of 231

Question Difficulty: **Hard**

Mr. X is admitted with an acute respiratory tract infection. On further questioning he admitted to progressive dyspnea, wheeze and productive cough for some years. He has smoked 20 cigarettes per day for 25 years.

Examination shows hyper-inflated chest with reduced breath sounds and his ankles were swollen. His CT is shown in the image. Pulmonary function tests show:

FEV1	2 L (70%)
FVC	3.2 L (90%)
FEV1 /FVC ratio	68% (>80%)



Which of the following represents the next most appropriate investigation in this case?

○ **CT chest**
○ **Alpha-1 antitrypsin levels**
○ **Echocardiogram**
● **Spirometry with reversibility**
○ **Bronchoscopy**

Description

Pulmonary functions tests shows obstructive pattern lung disease. His chest CT shows hyperinflated lung with multiple bullae.

COPD should be considered in patients over the age of 35 who have a risk factor (generally smoking) and who present with one or more of the following symptoms:

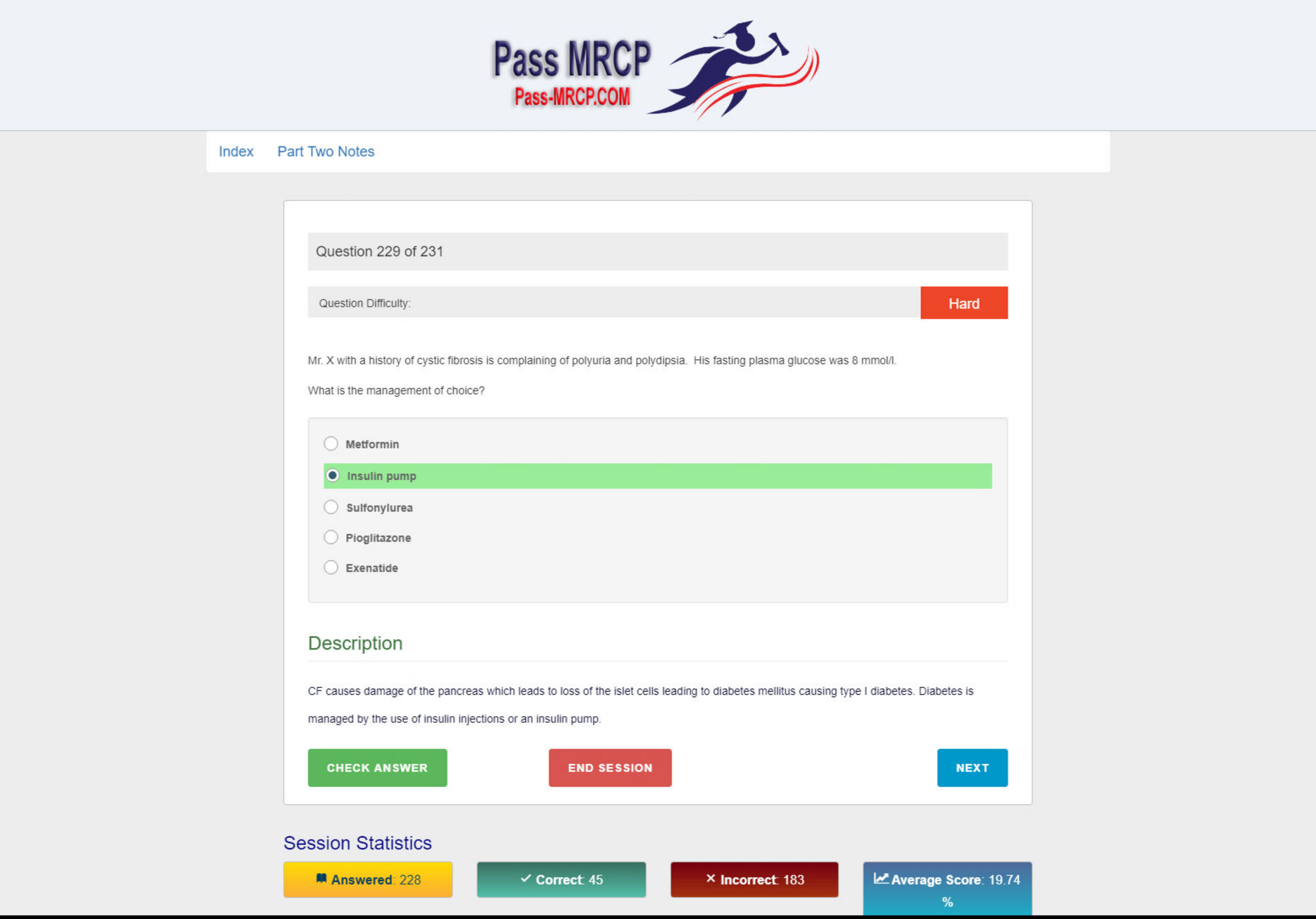
- Exertional breathlessness
- Chronic cough
- Regular sputum production
- Frequent winter 'bronchitis'
- Wheeze

COPD must be differentiated from bronchial asthma by repeating spirometry after inhaled B2 for assessment of airways reversibility.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 227 ✓ **Correct**: 44 ✕ **Incorrect**: 183 **Average Score**: 19.38 %



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Index
Part Two Notes

Question 229 of 231

Question Difficulty: **Hard**

Mr. X with a history of cystic fibrosis is complaining of polyuria and polydipsia. His fasting plasma glucose was 8 mmol/l.

What is the management of choice?

- ○ **Metformin**
- ● **Insulin pump**
- ○ **Sulfonylurea**
- ○ **Pioglitazone**
- ○ **Exenatide**

Description

CF causes damage of the pancreas which leads to loss of the islet cells leading to diabetes mellitus causing type I diabetes. Diabetes is managed by the use of insulin injections or an insulin pump.

CHECK ANSWER
END SESSION
NEXT

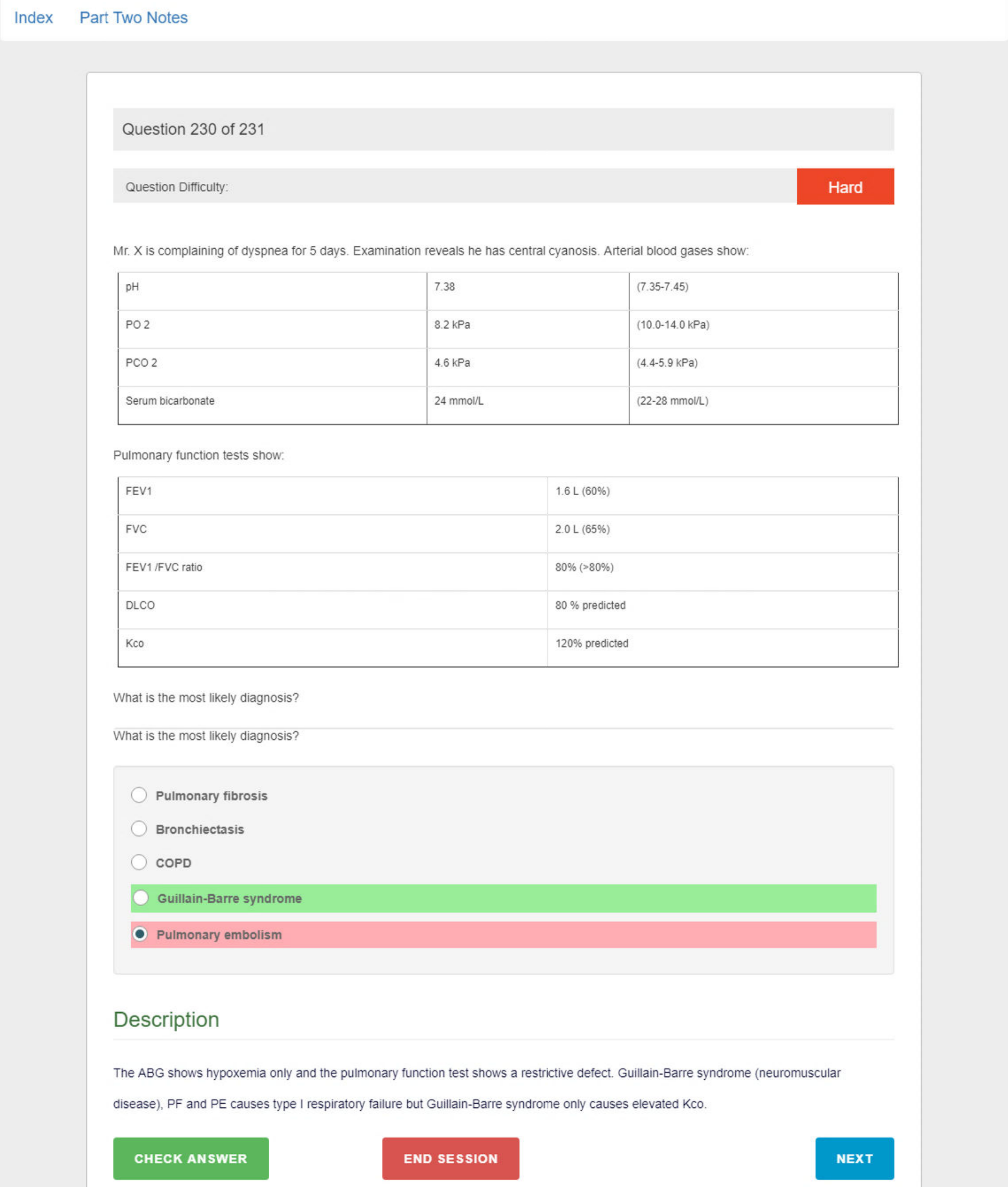
Session Statistics

Answered: 228

✓ **Correct**: 45

✕ **Incorrect**: 183

Average Score: 19.74 %



Question 230 of 231

Question Difficulty: Hard

Mr. X is complaining of dyspnea for 5 days. Examination reveals he has central cyanosis. Arterial blood gases show:

pH	7.38	(7.35-7.45)
PO 2	8.2 kPa	(10.0-14.0 kPa)
PCO 2	4.6 kPa	(4.4-5.9 kPa)
Serum bicarbonate	24 mmol/L	(22-28 mmol/L)

Pulmonary function tests show:

FEV1	1.6 L (60%)
FVC	2.0 L (65%)
FEV1 /FVC ratio	80% (>80%)
DLCO	80 % predicted
Kco	120% predicted

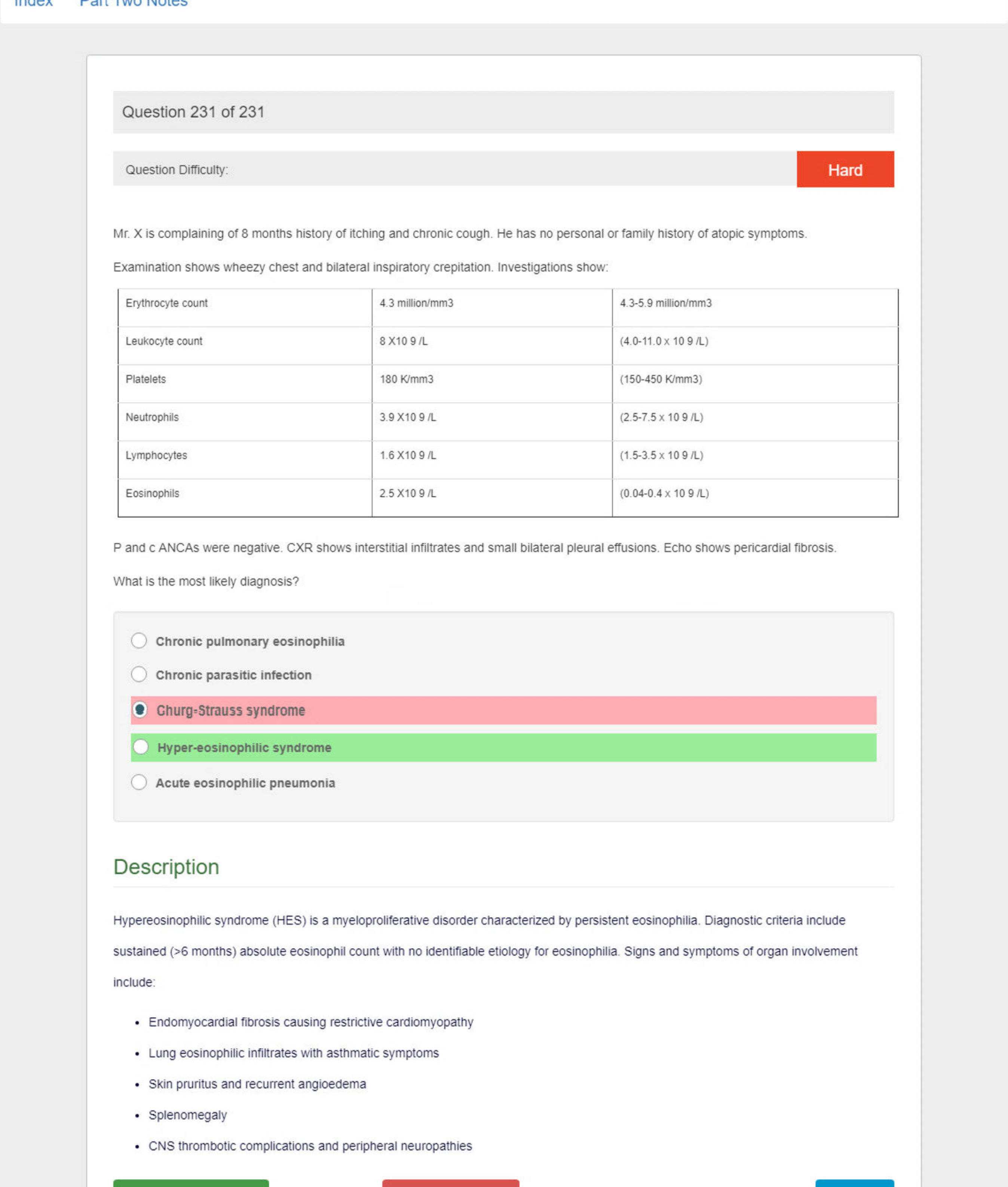
What is the most likely diagnosis?

What is the most likely diagnosis?

- ○ **Pulmonary fibrosis**
- ○ **Bronchiectasis**
- ○ **COPD**
- ○ **Guillain-Barre syndrome**
- ● **Pulmonary embolism**

Description

The ABG shows hypoxemia only and the pulmonary function test shows a restrictive defect. Guillain-Barre syndrome (neuromuscular disease), PF and PE causes type I respiratory failure but Guillain-Barre syndrome only causes elevated Kco.



Question 231 of 231

Question Difficulty: Hard

Mr. X is complaining of 8 months history of itching and chronic cough. He has no personal or family history of atopic symptoms.

Examination shows wheezy chest and bilateral inspiratory crepitation. Investigations show:

Erythrocyte count	4.3 million/mm3	4.3-5.9 million/mm3
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	3.9 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	1.6 X10 9 /L	(1.5-3.5 x 10 9 /L)
Eosinophils	2.5 X10 9 /L	(0.04-0.4 x 10 9 /L)

P and c ANCAs were negative. CXR shows interstitial infiltrates and small bilateral pleural effusions. Echo shows pericardial fibrosis.

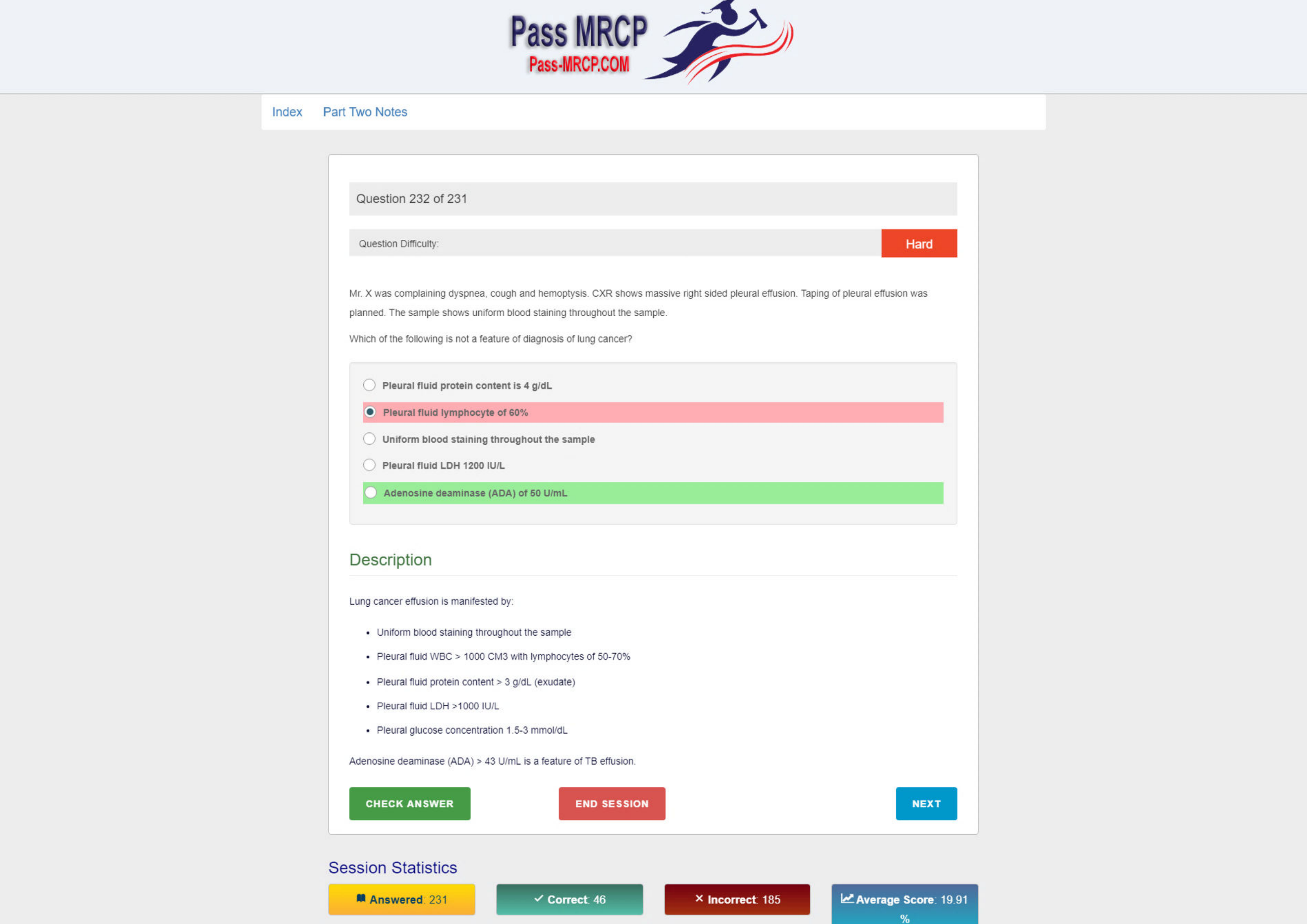
What is the most likely diagnosis?

○ **Chronic pulmonary eosinophilia**
○ **Chronic parasitic infection**
● **Churg-Strauss syndrome**
○ **Hyper-eosinophilic syndrome**
○ **Acute eosinophilic pneumonia**

Description

Hypereosinophilic syndrome (HES) is a myeloproliferative disorder characterized by persistent eosinophilia. Diagnostic criteria include sustained (>6 months) absolute eosinophil count with no identifiable etiology for eosinophilia. Signs and symptoms of organ involvement include:

- Endomyocardial fibrosis causing restrictive cardiomyopathy
- Lung eosinophilic infiltrates with asthmatic symptoms
- Skin pruritus and recurrent angioedema
- Splenomegaly
- CNS thrombotic complications and peripheral neuropathies



Question 232 of 231

Question Difficulty: **Hard**

Mr. X was complaining dyspnea, cough and hemoptysis. CXR shows massive right sided pleural effusion. Taping of pleural effusion was planned. The sample shows uniform blood staining throughout the sample.

Which of the following is not a feature of diagnosis of lung cancer?

○ **Pleural fluid protein content is 4 g/dL**

● **Pleural fluid lymphocyte of 60%**

○ **Uniform blood staining throughout the sample**

○ **Pleural fluid LDH 1200 IU/L**

○ **Adenosine deaminase (ADA) of 50 U/mL**

Description

Lung cancer effusion is manifested by:

- Uniform blood staining throughout the sample
- Pleural fluid WBC > 1000 CM3 with lymphocytes of 50-70%
- Pleural fluid protein content > 3 g/dL (exudate)
- Pleural fluid LDH >1000 IU/L
- Pleural glucose concentration 1.5-3 mmol/dL

Adenosine deaminase (ADA) > 43 U/mL is a feature of TB effusion.

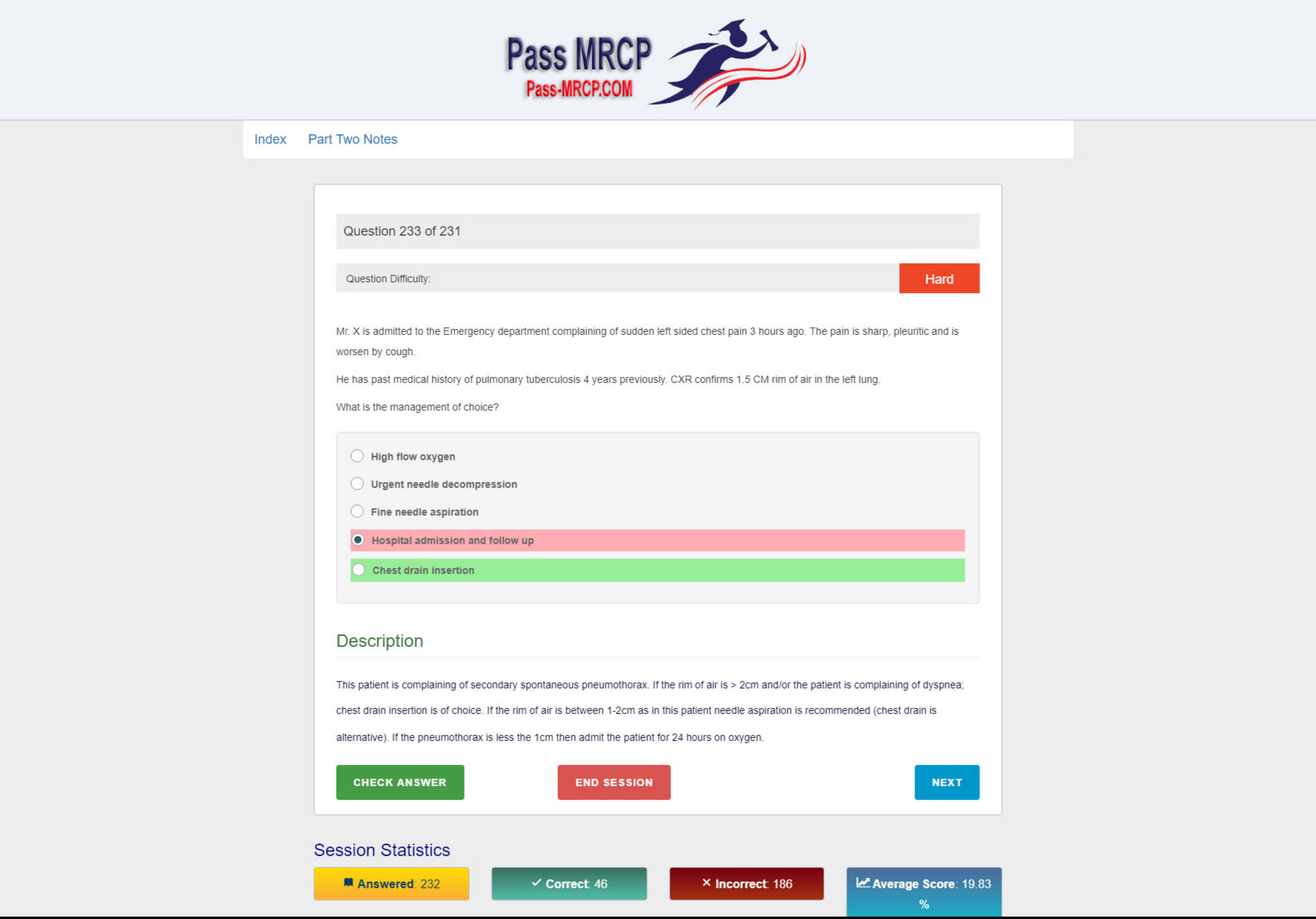
Session Statistics

Answered: 231

✓ **Correct**: 46

✕ **Incorrect**: 185

Average Score: 19.91 %



Question 233 of 231

Question Difficulty: **Hard**

Mr. X is admitted to the Emergency department complaining of sudden left sided chest pain 3 hours ago. The pain is sharp, pleuritic and is worsen by cough.

He has past medical history of pulmonary tuberculosis 4 years previously. CXR confirms 1.5 CM rim of air in the left lung.

What is the management of choice?

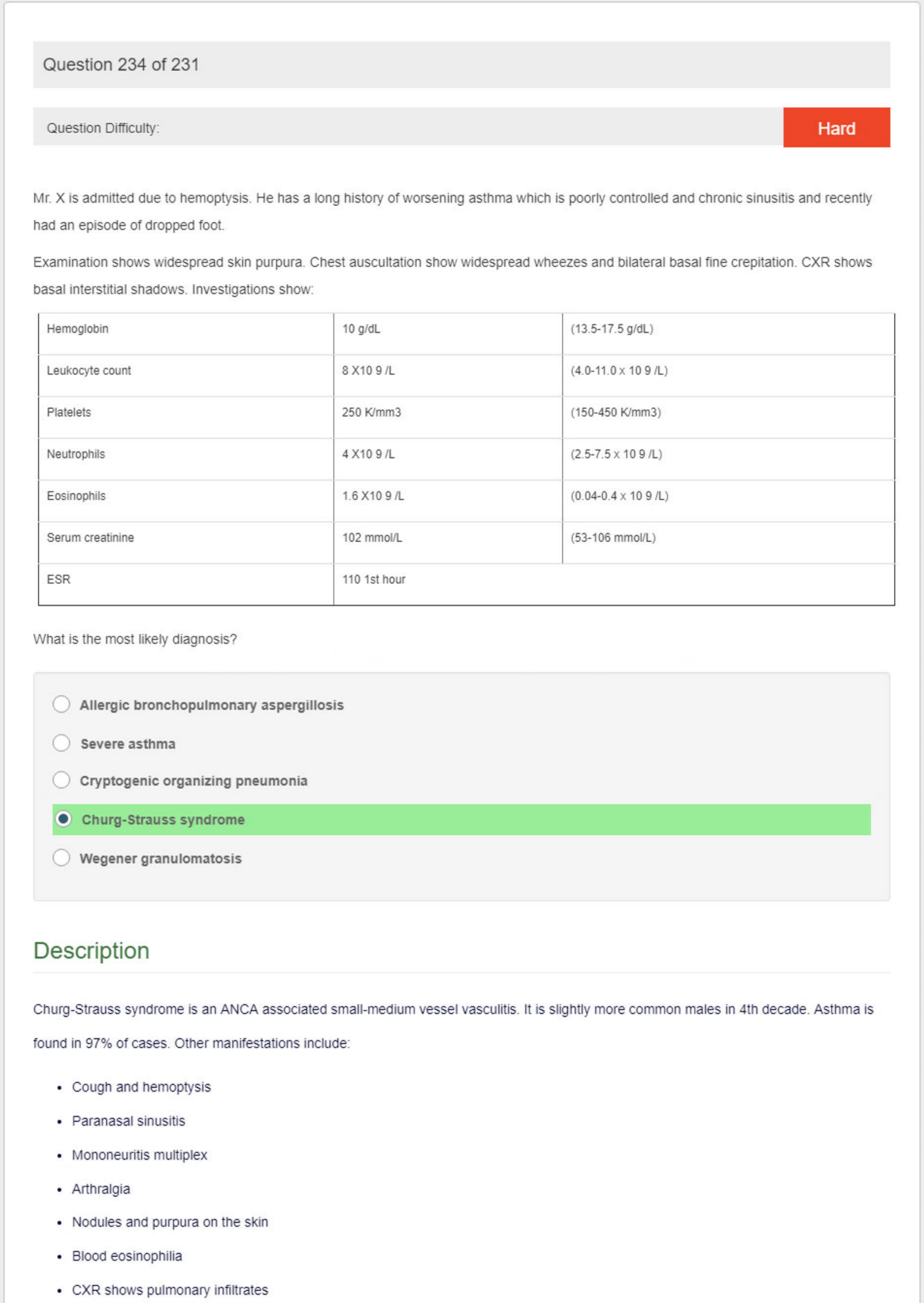
- ○ **High flow oxygen**
- ○ **Urgent needle decompression**
- ○ **Fine needle aspiration**
- ● **Hospital admission and follow up**
- ○ **Chest drain insertion**

Description

This patient is complaining of secondary spontaneous pneumothorax. If the rim of air is > 2cm and/or the patient is complaining of dyspnea; chest drain insertion is of choice. If the rim of air is between 1-2cm as in this patient needle aspiration is recommended (chest drain is alternative). If the pneumothorax is less the 1cm then admit the patient for 24 hours on oxygen.

Session Statistics

Answered: 232
✓ **Correct**: 46
✕ **Incorrect**: 186
Average Score: 19.83 %



Question 234 of 231

Question Difficulty: **Hard**

Mr. X is admitted due to hemoptysis. He has a long history of worsening asthma which is poorly controlled and chronic sinusitis and recently had an episode of dropped foot.

Examination shows widespread skin purpura. Chest auscultation show widespread wheezes and bilateral basal fine crepitation. CXR shows basal interstitial shadows. Investigations show:

Hemoglobin	10 g/dL	(13.5-17.5 g/dL)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Eosinophils	1.6 X10 9 /L	(0.04-0.4 x 10 9 /L)
Serum creatinine	102 mmol/L	(53-106 mmol/L)
ESR	110 1st hour	

What is the most likely diagnosis?

○ **Allergic bronchopulmonary aspergillosis**

○ **Severe asthma**

○ **Cryptogenic organizing pneumonia**

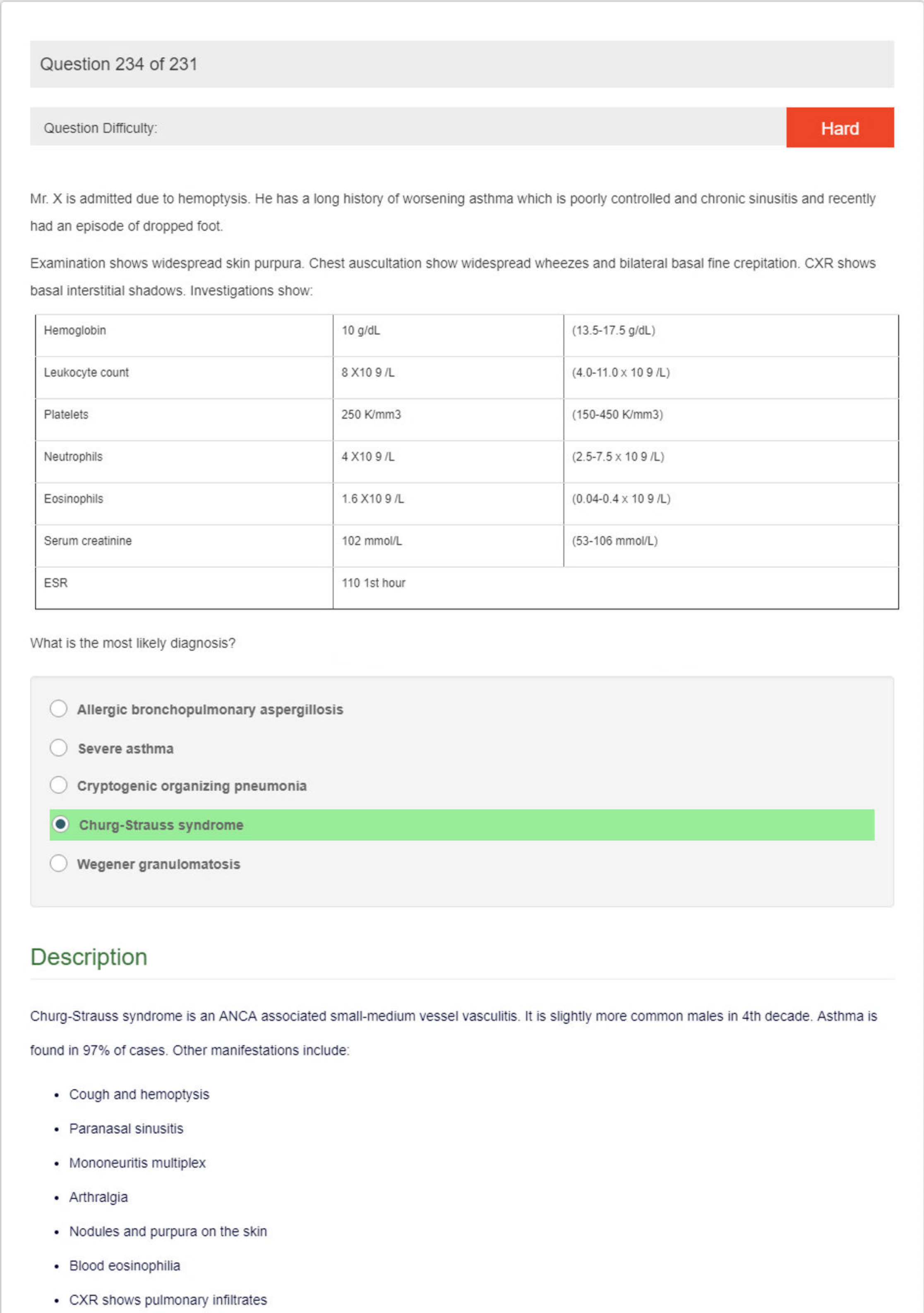
● **Churg-Strauss syndrome**

○ **Wegener granulomatosis**

Description

Churg-Strauss syndrome is an ANCA associated small-medium vessel vasculitis. It is slightly more common males in 4th decade. Asthma is found in 97% of cases. Other manifestations include:

- Cough and hemoptysis
- Paranasal sinusitis
- Mononeuritis multiplex
- Arthralgia
- Nodules and purpura on the skin
- Blood eosinophilia
- CXR shows pulmonary infiltrates



Question 234 of 231

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